

**10th International Conference of the
School of Economics and Business**

**Book of Abstracts and
Conference Proceedings**

October 14, 2022

Sarajevo, Bosnia and Herzegovina

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FOREWORD

Dear authors, esteemed readers,

It is our great pleasure to introduce the Book of abstracts and Conference proceedings of this year's conference. International Conference of the School of Economics and Business aims to bring together academics as well as practitioners to discuss diverse issues in the fields of economics and business with a focus on transition economies. The purpose of this conference is to disseminate high quality research and to promote scientific information interchange between researchers, developers, students, and practitioners.

The papers presented in this publication represent the cutting-edge research and innovation in our field, and reflect the dedication and hard work of the many talented individuals who contributed to the conference. We strongly believe that the discussions between prominent and experienced researchers at the conference will serve as a solid bases for improving your paper and enriching your further research.

As was the case in earlier ICES conference it is our pleasure to inform conference participants that selected papers presented at this conference will be considered for publication in a special issue of the South East European Journal of Economics and Business published by the School of Economics and Business, Univesity of Sarajevo.

A special thank is addressed to keynote speakers, Vesna Bojicic-Dzelilovic, LSE Global Governance at the London School of Economics and Political Science and Joze P. Damijan, the School of Economics and Business, University of Ljubljana. We are certainly aware that it has taken time and effort to take part in this Conference, and this is much appreciated.

We would like to express our deepest gratitude to all authors and participants for their contributions.

Looking forward to having you on the next conference.

Sarajevo, October 2022

Editors

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RESILIENT LEADERSHIP INFLUENCE ON PROACTIVE CRISIS MANAGEMENT

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Abstract

Considering the myriad of everyday unforeseen and disturbing upheavals sweeping up the business scene, the necessity for leaders who show pronounced resilience in piloting their organizations on course of brighter prospective is extremely enormous. This study aimed to pinpoint if resilient leadership (viewed through mental, emotional, social, ethical and physical resilience) influences on proactive crisis management in a positive and statistically significant manner. Based on data collected by 112 leaders, this study employs a resilience theory which relates to leadership and incorporates hierarchical regression as analysis method. In accordance with the research results, it is discovered that leaders in Bosnia and Herzegovina show quite high levels of resilience in business and life, and it is disclosed that resilient leadership in a positive and statistically significant manner influences on proactive crisis management. The contribution of this study is manifold – firstly, research instrument for resilient leadership is proposed and validated; secondly, the literature regarding resilient leadership and proactive crisis management is enriched; and thirdly, it is empirically proven that resilient leadership influences positively and significantly on proactive crisis management.

Keywords: Resilient leadership, Mental resilience, Emotional resilience, Proactive crisis management, Crisis management

JEL classification: H12, D91, M12

RECENT DEVELOPMENTS IN THE TURKISH ECONOMY

Yaşar Akgün

Abstract

The Turkish economy has been facing some macroeconomic imbalances since September 2021. Inflation rate (CPI), forgotten long, reached 80 % as of end of August 2022. Producers' prices have risen even further. Despite this shocking price situation, growth figures are more than satisfactory. GDP grew by 11.4 % last year, 2021. In 2022/I and 2022/II GDP growth rates were 7.5 % and 7.6%, respectively. Unemployment seems to have decreased from 12% to 10%, reminding short-term Philips curve trade-off. However, income distribution seems to have deteriorated badly. Wages and salaries have lost ten percentage points share in income to around 25.4 % (from 36.8%), while profits' share (so-called enterprise surplus) have increased from 42.9 % to 54 %. Unbelievable figures for such a short time! Normally, even one percentage change takes two to three years. Why did it happen? Notorious Corona-19 pandemic is one reason. Russian war on Ukraine is another. Presidential and general elections in June 2023 are also another, perhaps more important, factor. Even in text books, elections are said to influence economic policy. A general tendency is mentioned for expansionary macroeconomic policy starting 18 month before elections. For election purposes, governments in general prefer employment in return for inflation. But in Turkey it has been exaggerated. President Erdogan has some unorthodox thinking about the interest. He declares that high interest rates cause inflation. In mainstream macroeconomics the opposite is the case. The President has intervened the Central Bank for lower interest rates. This gave bad signal for financial markets doubling US Dollar exchange rate. Investors and savers have rushed to get rid of the Turkish Lira to acquire other assets such as foreign currency, real estate, raw materials, leading to inflation and bad income distribution. To encourage investment in the Turkish lira, time-depositors are guaranteed for the depreciation of the lira against the dollar, plus other incentives.

Keywords: Inflation, Monetary Policy, Income Distribution, Turkish Economy
JEL Classification: D31, E31, E52

SCIENTIFIC PRODUCTIVITY AND IMPACT OF PUBLIC BUSINESS SCHOOLS IN SOUTH-EAST EUROPE: RESULTS OF A BIBLIOMETRIC STUDY

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Abstract

In this paper, we analyze the scientific productivity and impact of selected public business schools in South East Europe (SEE) in the 2016-2021 period, by using the scientific output, indexed in Elsevier Scopus reference database. Visualization of bibliometric data is used to analyze the structure of the regional business school research and uncover the patterns of international, regional and national co-operation. The most productive and influential authors, institutions and publication outlets in the region are identified in the field of business research. Research results are discussed from the viewpoints of national scientific evaluation policies, international business school accreditations and other factors, which might influence the scientific output of public business schools. Recommendations for higher education policy-makers and business school administrators are identified and discussed.

Keywords: Higher education, Business schools, Bibliometric analysis, Science mapping, South East Europe

JEL: I23, O30

WORKING CONDITIONS AND WORK ENVIRONMENT - PREFERENCES OF THE FUTURE GENERATION OF HIGHLY EDUCATED WORKFORCE

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Abstract

The dominant problems faced by the labor market in the Republic of Croatia are migration and depopulation, a high rate of fixed-term employment contracts and precarious forms of work among the working-age population, and a low lifelong learning rate. According to Eurostat data on lifelong learning rate, the Republic of Croatia is in the back of the European Union and has been in that position for many years. The circumstances facing companies in the Republic of Croatia today are related to the lack of manpower in the service and production sectors. According to research on the phenomenon of migration of young people and highly educated professionals, it is observed that students already think about migration during their studies. The mentioned future workforce speaks foreign languages very well, has a wide network of social contacts (acquaintances, relatives, friends) in highly developed countries of the European Union, and is ready to migrate abroad in order to find a job and ensure a better quality of life. Young generations are entering the labor market whose preferences regarding mobility and working conditions differ from those of previous generations. Creating a stimulating environment for attracting young, highly educated people is a challenge for companies and the domestic labor market as a whole. The main reason for this research is to get an answer about the preferred work conditions and work environment of the highly educated workforce, and how to influence the readiness and desire for continuous training of young people, future employees. The research was conducted through social networks on a sample of the student population in the Republic of Croatia. Regression analysis identified three predictor variables that contribute to the desire for continuous training: job security, business-related mobility in the country and abroad, and a friendly and relaxed work atmosphere. These findings have practical applicability for companies: for HR managers in adapting recruitment marketing, career development, and talent management. These findings have practical applicability for company management, which shapes the company's organizational culture (climate, values, and management style). The new generations of the workforce value a friendly and relaxed working atmosphere, which is certainly reflected in the need to create an adequate working climate in the company, adapt the management style

(according to the participative management style), adapt language and communication, norms, and values.

Keywords: human resources management, talent management, working conditions, work environment, regression analysis.

JEL classification: D23, J28, J41, J81, M14, O15

INTRODUCTION

The labor market in the Republic of Croatia characterizes an outflow of the able-bodied population through migration to the richer countries of the European Union. Croatia belongs to the group of countries called net exporter of human resources and counts among the three countries of the European Union from which the most doctors emigrate. In addition to the present phenomenon of migration, the labor market is characterized by high unemployment rates among young people aged 15 to 29 in the total working age population. The mentioned age group of young people is also at the top according to other labor force indicators in the Republic of Croatia: part-time employment and temporary contract 29.5% in 2021, in to the total working population aged 15-64 (Eurostat, Part-time employment and temporary contracts - annual data. Furthermore, indicators of the participation of employees aged 18 to 64 in training and education differ according to the type of employment contract. Thus, for example, employees who are employed for an indefinite period participate with 5.7% (average EU27 11.8%). Lifelong learning aims at improving knowledge, skills and competences, through formal or informal learning and training, so that the rate of participation in education and training includes formal and informal education and training (Eurostat, Participation in education and training).

The Republic of Croatia is facing two extremely unfavorable trends that will have an increased impact on the labor market, namely migration and depopulation caused by negative natural growth (Lutz, et al. 2018). Along with the problems of migration, population depopulation, a high rate of fixed-term employment contracts and an extremely low rate of on-the-job learning, the circumstances faced by companies in the Republic of Croatia today relate to the lack of labor in the service and production sectors. According to research on the phenomenon of migration of young people and highly educated professionals, it observes students that already think about migration during their studies. The mentioned future workforce speaks foreign languages very well, has a wide network of social contacts (acquaintances, relatives, friends) in highly developed countries of the European Union and is ready to migrate abroad in order to find a job in the profession and ensure a better quality of life.

Therefore, creating a stimulating environment in companies to attract young, highly educated people is a challenge for companies and the domestic labor market as a whole. In addition to attracting young and highly educated individuals, lifelong learning in companies is an additional problem. Digitization and new technologies create the basis for innovation in companies. Through learning, employees improve their knowledge, skills and competences, become more capable of creating new values and innovations. In addition to lifelong learning, the management style in the company must be such that it creates vertical trust among employees. In such a climate, employees are willing to take risks and innovate products and processes.

One of the tasks of human resources management at the company level is to create an environment conducive to the attraction of a highly educated workforce, lifelong learning, growth and development of employees. The main reason for this research is to get an answer about the preferred working conditions and working environment of the future highly educated young workforce. Furthermore, how to influence the readiness and desire for continuous training of

young people, future employees. At a time when employers have the option of hiring employees through agency employment instead of employment in the company itself, the question arises of how important job security, learning, and creativity at work are to the young generations.

The European Union affirms the term flexicurity, as a way of reconciling the flexibility in hiring/dismissing employees that companies need with the employees' need for security. In addition to these variables, preferences in relation to mobility, balance between work and private life, flexible working hours, teamwork, salary, examined job reputation additionally. Initial research questions, objectives and initial hypotheses were set. In the first part, the authors will test the hypotheses, followed by a regression analysis of variables affecting lifelong learning, in a group of respondents who belong to the student population.

LITERATURE REVIEW

Research from 2008 indicates that Croatian highly educated employees are generally not satisfied with motivational strategies in Croatian companies. They consider non-material motivation strategies more effective than material compensation strategies, which they consider unimportant at the time of the research (Pološki-Vokić, Klindžić and Đaković, 2008).

Guillot-Soulez, and Soulez on a sample of 592 respondents of Generation Y discuss the stereotype within Generation Y and job preferences of graduates. They demonstrate the preferences of Generation Y regarding job security and a relaxed work atmosphere. The authors recommend additional research that would improve the validity of their study. They also recommend that the study be conducted with different populations. Their findings have practical implications for HR departments (Guillot-Soulez and Soulez 2014).

Nukic investigates tangible and intangible rewards that companies give to employees. It investigates the preferences of generation Y on a sample of students in the Republic of Croatia. Students prefer job security, the possibility of advancement, interesting work (Nukic, 2017).

Mohapatra et al. prove the importance of job security among the young generation Y, and job satisfaction takes first place. Members of Generation Y prefer interesting work that provides them with the excitement and adventure they seek (Mohapatra et al., 2017).

The concept of boundaryless career is unified by Sullivan and Arthur, emphasizing the physical and psychological component of mobility (Sullivan and Arthur, 2006).

In his research, Clarke connects the self-assessment of employability with the degree of job mobility and suggests internal job rotation for employees and the creation of opportunities for internal and external networking (Clarke, 2009).

Research on a sample of 2,293 respondents indicates the need for job security for male respondents, while female respondents strive more to balance work with university commitments (Samutachak, Darawuttimaprakorn, and Manajit, 2021)

Members of Generation Y differ from previous generations in terms of involvement in the labor market already during their studies. Three out of four students work in jobs that are different from their planned occupation, they have higher expectations of job quality and security than students who do not work (Oliver 2006).

Woodman investigates the attitudes of young people who finished school in 1991 and 2006. Both groups identified the importance of job security when deciding on a job, despite the claim that emerging generations prefer flexibility over the importance of job security (Woodman 2019).

Research into the motivational factors of students of generation X (1990) and generation Y (2006) indicates that work and salary are ranked consistently in both generations. Generation Y students rate job security as more important than generation Y respondents (Bristow et al., 2011).

Lub et al. they investigate generational differences (baby boom generation, generation X, generation Y) and determine the differences between them in preferences for autonomy, job security, balance of private and work life, within organizational mobility, commitment to the organization, tendency towards turnover. Younger generations of respondents show a higher turnover intention, less commitment to organizations. The authors of the study believe that it is necessary to take these findings into consideration when managing human resources in the company so that talent does not migrate to other sectors of the labor market (Lub et al., 2012).

Students who work part-time in retail during their studies are attracted by opportunities for self-development, pay and job security, prefer responsibility, challenge and work-life balance (Broadbridge, Maxwell and Ogden, 2007).

The ranking of workplace factors of generation Y indicates the importance of getting a good salary, while on the other side of the priority, job security is rated relatively low (Dumets and Cadil, 2018).

Creativity at work of members of Generation Y is one of its characteristics (Twenge and Campbell, 2008). Along with dynamism and ambition, creativity contributes to product innovation (Ruffatto, Severo, and Decesaro, 2015). In the globalized world, creativity and development of employees with regard to creative qualities is an increasingly necessary competence. Innovation and creativity should be especially promoted through lifelong learning (Pechová, 2020).

The opportunity for continuous improvement, care for employees, opportunities for career advancement, diversity in daily work and a dynamic and progressive approach to business make up the five most important organizational features of the respondents. Female respondents value working within the stipulated working hours, a friendly, informal culture, a stress-free work environment, international diversity of colleagues, while male respondents value a high starting salary more (Terjesen, Vinnicombe and Freeman, 2007).

Members of Generation Y are prone to fluctuations. Avoiding brain drain requires managing human resources aimed at providing balance between work and private life and employee satisfaction. These findings are key to retaining Generation Y in the private sector (Hassan et. al., 2020). The importance of a balance between private and business life, flexibility and career development are the main reasons why Generation Y works in their parents' companies and continues the family entrepreneurial tradition (Hradský and Sadílek, 2020). Members of generation Y expect from their employers a balance in private and business life, flexible working hours and flexible workplace (Skorska, 2019).

The preferences of members of Generation Y regarding motivational factors in the workplace are interesting and varied and flexible work. In addition to this, millennials value good relationships with colleagues and superiors, balance between private and business life, opportunities for development (Kultalahti and Viitala, 2014). Younger generations are more mobile (organizational mobility and job mobility) than Generation X, the Baby Boomers, and the mature generation, born before 1946 (Lyons, Schweitzer, and Ng, 2015). The preferences of mobility, freedom and flexibility were also determined in the research of Yunus and Ernawati (Yunus and Ernawati, 2018). Companies that train their employees more effectively outperform the competition (Kim and Ployhart, 2014). Talent management activities in the organization should consider the interest of Generation X and Y in training, development and career advancement. Both mentioned generations have more pronounced needs for training and development than was observed in the Baby boom generation (Festing and Schäfer, 2014). Knowledge sharing in the organization has a significant impact on the development of employee competencies and the creation of intentions to stay in the company of employees of generation Y (Naim and Lenkla, 2016). Competence development is key to realizing the affective commitment

of employees of generation Y, which leads to the intention of members of generation Y to stay in the company (Naim and Lenka, 2018).

Table 1. Research questions and hypotheses

<i>Research Question (RQ):</i>	<i>Research objective (RO):</i>	<i>Hypothesis (H):</i>
<i>RQ 1. Is the importance of continuous training in the workplace related to creative work?</i>	<i>RO 1. To examine whether there is a connection between training in the workplace and the importance of creatively performing creative work</i>	<i>H1. A statistically significant connection was identified between the importance of continuous improvement at the workplace and the importance of performing creative work</i>
<i>RQ 2. Is the importance of continuous training in the workplace related to job security?</i>	<i>RO 2. To examine whether there is a connection between the importance of continuous training in the workplace and the importance of job security.</i>	<i>H2. A statistically significant connection was identified between the importance of continuous training at the workplace and the importance of job security</i>

Source: the authors

RESEARCH METHODOLOGY

Data collection

The authors conducted the research from April 12 to 16, 2022 through social networks, using the Google Forms form. The survey distributed to students of different scientific fields of study, in order to ensure the greatest diversity of respondents in the sample. The authors collected 156 complete responses. The authors guaranteed respondents anonymity during the testing; emphasized the possibility of withdrawing from the research at any time. In addition, the respondents could not influence each other during the research, as well as the research leaders on the respondents, which ensured the independence of observations.

Respondents' answers measured on a five-point Likert scale with the associated option "neither agree nor disagree", which ensured the semi-interval scale.

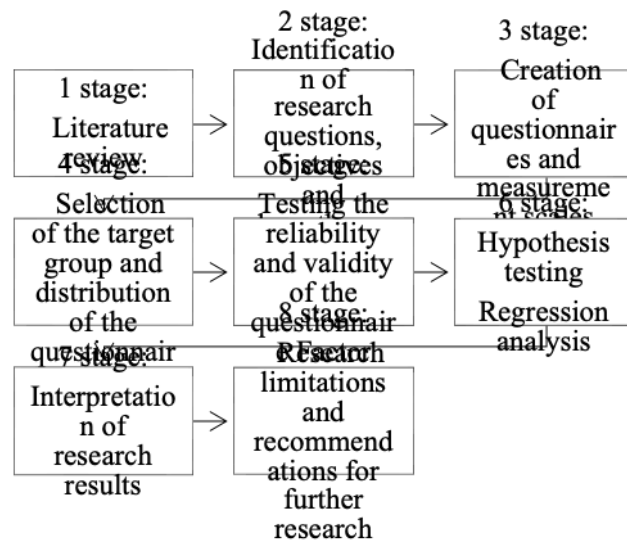
Statistical processing of respondents' answers performed using the statistical program IBM SPSS Statistics 25 in accordance with the defined steps:

1. In the first phase, examined the normality of the distribution by using numerical and visual methods. The data reviewed with regard to the existence of outliers. From the numerical methods, measures of asymmetry, roundness, with associated standard errors and analyzed by the Kolmogorov-Smirnov test. Histograms, tree and leaf diagrams and Q-Q charts analyzed from visual methods (Horvat and Mioč, 2019). The Kolmogorov-Smirnov normality test for the observed variables in the hypotheses is $p < .05$. Numerical indicators of the ratio of asymmetry and roundness with associated standard errors are close to zero. Visual methods (Q-Q plot of data normality and Q-Q plots of detrended normal data) suggest that 95% of the data lie within the interval ± 2 . The data indicate a distribution of responses similar to normal.
2. In the second phase, Pearson's correlation analysis, performed two-way test (ρ). The interpretation of the results with the acceptance/non-acceptance of the set hypotheses at the $p < .05$ level is indicated.
3. In the third phase, carried out a linear regression analysis of the variables from the questionnaire (dependent variable: I think that the possibility of continuous improvement is important to me). The homoscedasticity test of the variables refers to the values of residual deviations that normally distribute near the diagonal line (Normal P-P Plot of Regression Standardized Residual, dependent variable: I think that the possibility of continuous

improvement is important to me). Linear regression performed analysis by using the Forward method. Nine variables were included in the analysis that measured the importance of certain working conditions. The aim of the performed linear regression analysis is to determine which variables contribute to the importance of continuous improvement in the workplace.

4. In the fourth part, the links of the research results with other similar research results are given. The authors gave recommendations for future research, as well as research limitations.

Figure 1. Presentation of the research methodology



Source: the authors

RESEARCH RESULTS

Data on respondents in the sample

Table 2 shows selected characteristics of respondents in the sample (gender, age, field of study).

Table 2. Display of the selected characteristics of the respondents

			Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Valid	M	45	28,8	28,8	28,8
		F	111	71,2	71,2	100
		Total	156	100	100	
Age	Valid	18-20	43	27,6	27,6	27,6
		21-25	101	64,7	64,7	92,3
		26-30	11	7,1	7,1	99,4
		More than 30	1	0,6	0,6	100
		Total	156	100	100	
Field of study	Valid	Technical sciences	34	21,8	21,8	21,8
		Natural Sciences	10	6,4	6,4	28,2
		Biomedicine and healthcare	28	17,9	17,9	46,2
		Humanities	4	2,6	2,6	48,7

	Social Sciences	80	51,3	51,3	100
	Total	156	100	100	

Source: the authors

According to the indicators, 92.3% of respondents belong to the age group of 18-25 years. Considering the gender structure, 71.2% of respondents are female. According to data on the field of study, one can see that 51.3% of respondents study in the field of social sciences, followed by technical sciences with 21.8% of respondents and other fields according to table 2.

Reliability and validity indicators of the measuring instrument

KMO and Bartlett's Test, Cronbach's Alpha indicator were used in the analysis of the reliability and validity of the measuring instrument. The values presented in tables 3 and 4.

Table 3. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Adequacy.	Measure of Sampling	,904
Bartlett's Test of Sphericity	Approx. Chi-Square	1002,563
	df	45
	Sig.	,000

Source: the authors

The processing result indicates $KMO > 0.6$, Bartlett test of sphericity $\chi^2(45) = 1002.563$, $p < .05$.

Table 4. Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,907	,911	10

Source: the authors

Indicators of Cronbach's alpha value $\alpha > 0.9$ suggest the conclusion of an excellent measurement scale (Horvat & Mijoč, 2019).

Hypotheses

Results of processing hypothesis H1

The research objective of RO 1. was to examine whether there is a connection between training at the workplace and the importance of creative performance of creative work? Table 5 shows the arithmetic mean and standard deviation of the variables included in hypothesis H1.

Table 5. Descriptive statistics of variables included in hypothesis H1

Descriptive Statistics

	Mean	Std. Deviation	N
I believe that the possibility of continuous improvement is important to me	4,37	1,054	156
I believe that creative work is important to me	3,98	1,215	156

Source: the authors

Table 6. Results of processing variables in hypothesis H1, Pearson's test, two-way

Correlations

	I believe that the possibility of continuous improvement is important to me	I believe that creative work is important to me
I believe that the possibility of continuous improvement is important to me	1	,630**
	Pearson Correlation	
	Sig. (2-tailed)	,000
	N	156

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

Source: the authors

The authors identified a statistically significant connection between the importance of continuous improvement at the workplace and the importance of performing creative work: ($\rho=,630$, $n=156$, $p<,05$). Hypothesis H1 is accepted.

Results of processing hypothesis H2

The research objective of RO 2. was to examine whether there is a connection between the importance of continuous training in the workplace and the importance of job security? Table 7 shows the arithmetic mean and standard deviation of the variables included in hypothesis H2.

Table 7. Descriptive statistics of variables included in hypothesis H2

Descriptive Statistics

	Mean	Std. Deviation	N
I believe that the possibility of continuous improvement is important to me	4,37	1,054	156
I believe that job security is important to me	4,52	1,056	156

Source: the authors

Table 8. Results of processing variables in hypothesis H2, Pearson's test, two-way

Correlations

	I believe that the possibility of continuous improvement is important to me	I believe that job security is important to me
I believe that the possibility of continuous improvement is important to me	1	,814**
	Pearson Correlation	
	Sig. (2-tailed)	,000
	N	156

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

Source: the authors

The authors identified a statistically significant connection between the importance of continuous training at the workplace and the importance of job security: ($\rho=,814$, $n=156$, $p<,05$). Hypothesis H2 is accepted.

Regression analysis

A total of 9 variables were analyzed by regression analysis using the Forward method: job security, creativity, business travel in the country and abroad, work-life balance, high salary, respectable job, flexible working time, teamwork, friendly and relaxed atmosphere (dependent variable: I believe that the possibility of continuous improvement is important to me). The main goal of the regression analysis using the Forward method was to determine which of these nine predictor variables contribute the most to the achievement of the dependent variable: I believe that the possibility of continuous improvement is important to me).

Table 9. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,814 ^a	0,662	0,660	0,615	0,662	301,690	1	154	0,000
2	,834 ^b	0,695	0,691	0,586	0,033	16,441	1	153	0,000
3	,841 ^c	0,708	0,702	0,575	0,013	6,815	1	152	0,010

a. Predictors: (Constant), I believe that job security is important to me

b. Predictors: (Constant), I believe that job security is important to me, I consider business travel in the country and abroad to be important

c. Predictors: (Constant), I believe that job security is important to me, I consider business travel in the country and abroad to be important, I believe that a friendly and relaxed working atmosphere is important to me

Source: the authors

Three predictor variables show a statistically significant predictive ability to influence the criterion variable. No statistically significant contribution was identified for the remaining 6 variables. Predictor variables explain $R^2_{adj}=70.2\%$ of the variation in the variable that measures the importance of the possibility of continuous improvement at the workplace ($F_{1,152}=6.815$, $p<,05$).

Table 10. Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
		B	Std. Error			
1	(Constant)	0,696	0,217		3,211	0,002
	I believe that job security is important to me	0,812	0,047	0,814	17,369	0,000
2	(Constant)	0,442	0,216		2,047	0,042
	I believe that job security is important to me	0,743	0,048	0,745	15,580	0,000
	I consider business travel in the country and abroad to be important	0,164	0,040	0,194	4,055	0,000
3	(Constant)	0,307	0,218		1,405	0,162
	I believe that job security is important to me	0,557	0,085	0,558	6,517	0,000
	I consider business travel in the country and abroad to be important	0,154	0,040	0,182	3,857	0,000
	I believe that a friendly and relaxed working atmosphere is important to me	0,225	0,086	0,223	2,611	0,010

a. Dependent Variable: I believe that the possibility of continuous improvement is important to me

Source: the authors

Statistically significant predictive variables have the following values: I believe that job security is important to me ($\beta=0.557$, $t=6.517$, $p<.5$), I believe that business travel in the country and abroad is important to me ($\beta=0.154$, $t=3.857$, $p<.5$), I believe that a friendly and relaxed working atmosphere is important to me ($\beta=0.225$, $t=2.611$, $p<.5$). The regression equation of the model reads:

I believe that the possibility of continuous improvement is important to me $=0.307+0.557*$ I believe that job security is important to me $+0.154*$ I believe that business travel in the country and abroad is important to me $+0.225*$ I believe that a friendly and relaxed working atmosphere is important to me.

Table 11. Summary presentation of research results

Number of hypothesis	Hypotesis:	Results of statistical procedures
H1	H1. A statistically significant connection was identified between the importance of continuous improvement at the workplace and the importance of performing creative work	<i>Accepted</i> ($\rho=,630$, $p<,05$)
H2	H2. A statistically significant connection was identified between the importance of continuous training at the workplace and the importance of job security	Accepted ($\rho=,814$, $p<,05$)
Regression equation	I believe that the possibility of continuous improvement is important to me $=0.307+0.557*$ I believe that job security is important to me $+0.154*$ I believe that business travel in the country and abroad is important to me $+0.225*$ I believe that a friendly and relaxed working atmosphere is important to me. Predictor variables explain $R^2_{adj} =70.2\%$ of the variation in the variable that measures the importance of the possibility of continuous improvement at the workplace ($F_{1, 152} =6.815$, $p<.05$).	

Source: authors

CONCLUSION AND RECOMMENDATIONS FOR FURTHER RESEARCH

The labor market in the Republic of Croatia is characterized by an outflow of the working-age population, high unemployment rates among young people aged 15 to 29, a high proportion of fixed-term employment contracts and a low proportion of employees in lifelong learning. Through learning, employees improve their knowledge, skills and competences, and become more capable of innovation. One of the tasks of human resources management at the company level is to create an environment conducive to attracting a highly educated workforce, lifelong learning, growth and development of employees.

The main reason of this research aimed at obtaining answers about the preferred working conditions and working environment of the future highly educated young workforce. Furthermore, how to influence the readiness and desire for continuous training of young people, future employees. The question arises as to how important job security, learning, and creativity at work are to young generations. In addition to these variables, preferences in relation to mobility, balance between work and private life, flexible working hours, teamwork, salary, examined job reputation additionally. Two hypotheses put forward in the paper, which confirmed by a sample of 156 respondents, students of various scientific fields of study.

The authors identified a statistically significant connection between the importance of continuous improvement at the workplace and the importance of performing creative work. In addition, a statistically significant connection identified by the importance of continuous training at the workplace and the importance of job security. Young people value job security. A total of 9 variables were analyzed by regression analysis using the Forward method (dependent variable: I

believe that the possibility of continuous improvement is important to me). Three predictor variables show a statistically significant predictive ability to influence the dependent variable. No statistically significant contribution was identified for the remaining 6 variables. The predictor variables explain $R^2_{adj} = 70.2\%$ of the variation in the variable that measures the importance of the possibility of continuous improvement at the workplace.

The statistically significant predictive variables are as follows: I believe job security important to me, I consider business travel in the country and abroad important to me, I believe a friendly and relaxed working atmosphere important to me.

These findings have practical applicability for companies: for managers of human resources services in the part of creating job descriptions, career development plans and talent management. These findings have practical applicability for company management, which shapes the company's organizational culture (climate, values, management style). The new generations of the workforce value a friendly and relaxed working atmosphere, which is certainly reflected in the need to create an adequate working climate in the company, adapt the management style (according to the participative management style), adapt language and communication, norms and values.

Recommendations for further research refer to the need to conduct research on as large a sample of respondents as possible, geographically wider coverage of the research, and the inclusion of other age groups in the research. At the same time, these recommendations would solve the limitations of this research, which are related to the geographical coverage and belonging to the younger age group of the respondents, which was the target group in the research. However, it would be useful to include respondents of other age groups in the research. Given that the Republic of Croatia has been for many years at the back of the European Union in terms of employee education and training, with very weak progress, it is necessary to carry out extensive research in order to obtain answers on how to increase the share of employees in lifelong learning. Therefore, what are the prerequisites for on the side of the employee and on the side of the company that can contribute to increase, the rate of employees should involve in lifelong learning.

Human resources management in companies with its tools in the field of training, career development, motivation, talent management can contribute to increasing this rate at the micro level of the company. On the other hand, one should advocate the contribution of public policy related to the labor market. Through Public employment services, opportunities for learning and other educational opportunities one can create for those whose competences and knowledge no longer match the needs of the labor market.

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WHAT DO YOU REALLY VALUE IN THE HOUSE OF NETFLIX? EXPLORING THE EFFECTS OF PERCEIVED VALUE AND RISK IN VIDEO STREAMING SERVICE SUBSCRIPTION

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Abstract

Video online streaming services are available through entertainment streaming apps that allow users to watch movies and TV shows whenever and wherever they want. Over the last several years, the revenue generated by video and music streaming services has skyrocketed, and this upward trend is anticipated to continue worldwide. Despite the rising popularity of video streaming services and entertainment streaming apps, there is a paucity of academic research regarding the link between the perceived value of video streaming services and consumers' disposition towards these services. Three main questions merit the research to close this gap in the literature: (1) What benefits of video streaming services do users value the most?; (2) Does the perceived value of video streaming services drive continued intention to use video streaming services?; and (3) Does the perceived risk associated with video streaming services weaken the link between the perceived value of video streaming services and users' continued intention to use video streaming services? A quantitative empirical study was carried out on a sample of 283 active Netflix users to answer these three research questions. The research instrument included 37 closed-ended questions divided into three sections. The first part of the questionnaire was designed to obtain the demographic characteristics of respondents. The second part of the questionnaire aimed to gather data about users' video streaming habits, whereas the last section included measurement scales for constructs of interest - perceived monetary, social, emotional, functional, and overall value of the streaming service (Singh et al., 2020); the perceived risk (Singh et al., 2020), and continued intention to use (Bhattacharjee (2001)). We used structural equation modelling and moderation analysis to examine the proposed hypotheses. Our findings

indicate that all perceived value constructs (social, emotional and convenience value) except monetary value positively impact users' continued intention to use Netflix. These findings align with previous research (e.g., Oyedele and Simpson (2018), which demonstrated that non-monetary benefits are more powerful than monetary benefits in predicting the usage of video streaming services. The assessment of the relative importance of different perceived value facets showed that the main predictors of Netflix's overall perceived value are social and convenience values. Regarding the moderating role of perceived risk, our findings indicate that perceived risk negatively moderates the relationship between overall perceived value and continued intention to use Netflix. Thus, our study revealed that perceived risk associated with the use of Netflix weakens the perceived value - continuance intention link. The current study deepens our understating of consumer perceived value theory in the context of video streaming services. From a managerial perspective, this study offers valuable insights into which dimensions of perceived value are essential to users and, thereby, helps managers in developing marketing campaigns for contemporary video streaming services and entertainment streaming apps.

Keywords: Perceived value, Video streaming services, Perceived risk, Continued intention, Netflix

JEL Classification: M100

THE IMPACT OF INCOME INEQUALITY ON POVERTY IN WESTERN BALKAN COUNTRIES

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Abstract

Purpose: The main purpose of this study is to know the effect of income inequality on poverty in Western Balkan countries. This study also includes another macroeconomic factor, which is unemployment rate. In addition, we have analyzed if there is a direct relationship of income inequality, GDP growth, unemployment rate and price inflation rate with the personal received remittances in Western Balkan countries. **Methodology:** The scientific methods that we have used in this paper are quantitative methods applying the analytical, observational and critical approaches based on economic theory. In this scientific research are used secondary data from official reports of the World Bank and respective Central Banks. We have used the Multiple Linear Regression and Pearson Correlation for this research relevant to the data used. **Findings:** Based on the empirical findings of this study we have a positive correlation between income inequality (GINI Index) and poverty headcount ratio. If the GINI Index increases, the poverty of the Western Balkan countries increases as well. While, regarding the relationship between personal received remittances and income inequality, there was no direct relationship, neither with GINI Index or GDP growth, and we found that there is a direct relationship with price inflation rate and unemployment rate. **Practical implications:** Obviously, countries that are still developing face inequalities and have poverty. We have recommend that the countries of Western Balkans should carefully manage the distribution of the income, try to manage a high level of unemployment and poverty through different policies. **Limitation of the study:** Limited data sources.

Keywords: Income inequality, poverty, unemployment, remittances, GDP.

JEL Classification: D33, I32, E24, E31, F24.

1. Introduction

The main objective of this study is to analyze the effect of the income inequality on poverty of the Western Balkan countries during the period 2012 - 2017. As well as, the relationship of personal remittances received with income inequality, unemployment, GDP growth and price inflation rate. In various countries have been identified numerous authors, that have analyzed the relationship between the income inequality and the poverty. Many of these studies have concluded that there is a positive relationship between the income inequality and the poverty, when income inequality increases, the rate poverty increases also.

A commonly used gauge of the distribution of income is the poverty rate. The poverty rate is the percentage of the population whose family income falls below an absolute level called the poverty line, which is an absolute level of income set by the government for each family size below which a family is deemed to be in poverty. In many countries, despite the continued growth in average income, the poverty rate doesn't seem to decline and this lack of progress in reducing poverty is closely related to the increasing inequality. Poor families are more likely than the overall population to experience homelessness, drug dependence, health problems, teenage pregnancy, illiteracy, unemployment, and low educational attainment. Members of poor families are more likely both to commit crimes and to be victims of crimes. Although it is hard to separate the causes of poverty from the effects, there is no doubt that poverty is associated with various economic and social problems (Mankiw, 2016). When it comes to reducing poverty their role have also remittances especially in western Balkan countries since there is an inflow of remittances in these countries. Remittances stimulate production, some parts are used for purchasing land and housing and also have an impact on low income families, reducing the poverty and increasing their welfare. Their impact is generally positive, with an effect of multiplication. But they can also reduce the activity rate of labor force participation especially in countries that are still in transition process as the ones in our study.

The reason why we got to study the Western Balkans in this research is because they are still developing and many of these Western Balkan countries have been plagued by some problems, including war, political, economic instability. Which has now made them even more attractive to study and analyze? The study includes five Western Balkan countries (countries Albania ...), here excluding the sixth Western Balkan country: Bosnia and Herzegovina due to the lack of data source. In this paper we will apply econometric models through regression, correlation matrix.

The structure of this scientific paper is organized as follows: The first section presents introduction to the research developed. The second section presents literature review on the effects of income inequality on poverty rate, as well as on remittances inflow. The third section describes the methodology of empirical research, the specification of the econometric model and explains other scientific methods which have been used to conduct empirical analysis. The fourth section presents the econometric analysis and the findings of this study from econometric models. The last part of this research paper presents the conclusions, recommendations, limitations and other implications which derive from this study.

2. Literature Review

There are several studies of income inequality, poverty and remittances and their relationship during different timing periods, although they are more concentrated in third world countries and there are a few countries that are still in transition process as Western Balkan countries.

Regarding (Feldstein, 1998), measuring the income inequality is not an easy task since it does not only depend of the cash inflow, but also on the other issues as health care and other benefits that are in the country, and identifying somebody as poor can be misleading since it might be only temporary on the lowest income scale. (Milanovic, 1998), in analyzing countries in transition found that the composition of population disposable income changed during the transition and as public sector privatization is on the go, the wages earned in private sector increased and as such had a positive impact in stability of GDP in those countries which enabled faster reforms from post-communist countries especially it was emphasized in Eastern European Countries. (Ravallion, 2001), found that no matter what is the level of growth in the country,

inequality has its impact in the poverty reduction, since that, also inequality is rising with growth in average living standards, poverty is falling on average.

When it comes to remittances their impact has been noted as very important in developing and transition countries. According to (Koechlin & Leon, 2007), "Remittances flows have proven to be a stable source of capital for poor countries because they do not depend on the same external factors as other kinds of private capital flows". Whilst (Shen, Docquier, & Rapoport, 2010), in their research with dynamic model of migration and remittances found that either in the short run or the long run remittances reduce wealth inequality increasing proportionally wealth for the poorer population, which might not be true for income inequality that might decrease during some period of time, only if there is a case of high inequality of income in productivity. However, they also manifest negative effects as explained by (Haller, Butnaru, & Butnaru, 2018) that an increase in income inequality, a decrease of the interest of those who receive them to be active in the labor market, the creation of dependence on these amounts sometimes makes the beneficiaries of remittances lose their motivation to be active participants in labor market. According to (UNDP, 2013), Kosovo households recipient of remittances have main source of income who are averagely more elderly and less educated than non-recipient households, and those who receive remittances and adult members of their families have lower level of employment and participation in the labor market compared to non-recipient ones. Similar situation is in Albania where almost 40% of population are migrants, where remittances are received from migrants with low skills which are usually higher paid abroad than in Albania and sent to low income families and in North Macedonia female-headed households, on average get more remittances than male-headed households (Jushi, Hysa, Cela, Panait, & Voica, 2021). According to the findings (Petreski & Jovanovic, 2013) analysis for remittances in Macedonia is that they reduce poverty, and decrease inequality. (Topxhiu & Krasniqi, 2017), concluded that when immigrants are low-skilled and the recipients of the remittances are poor, they increase the potential for development and poverty reduction, they might also help in schooling of relatives, nutrition and health care of the elderly family members, as well as in investments in private sector and investment in housing and real estate. Therefore, the labor market and inflation might have the impact in the economy on long run especially knowing that there is a high level of informal economy, where some of the remittances might be invested.

Although, it is well known that there is a similarity to all the Western Balkan countries where the unemployment rates are high that the remittances mostly are used for household consumption.

3. Research methodology and specification of the econometric model

In this study we will carry out in advance an empirical analysis of the impact of income inequality on poverty of Western Balkan Countries (excluding Bosnia and Herzegovina due to the missing data). The data used in the research are secondary that were taken from the reports of World Bank and Central Banks of the countries. But related to this topic, exactly with the income inequality, we will see if there are direct relations between remittances and GINI Index as well as will GDP growth, inflation and unemployment.

This research is concentrated in the situation of the poverty in those countries from 2012 until 2017. This analyzed period is due to the limited data. We will see in each country the increased and decreased poverty through every year.

The main hypothesis of this study is:

H₁: The income inequality has affected the poverty of Western Balkan countries.

And the other one related to remittances is:

H₂: There is a direct relationship between the personal remittances received and

- a) GINI Index,
- b) Unemployment rate,
- c) GDP growth and
- d) Price inflation rate in Western Balkan countries.

The time period included in this study is 2012 until 2017 and the number of observations reaches up to 34. The data are processed in the SPSS program and to verify the validity of the hypothesis of this study, we have applied the linear regression, correlation analysis and the ANOVA test.

Table 1: Description of the variables included in the main econometric model

Variable	Variable's description	Data source
Dependent variable (Y)	Poverty headcount ratio at \$1.90 a day [2011 PPP] [% of population] (POV)	The World Bank
Independent variable (X₁)	Income inequality (GINI Index)	The World Bank
Independent variable (X₂)	Unemployment total (% of total labor force) (UEMPL)	The World Bank, Countries' Central Banks

Source: Authors (2022)

Table 2: Description of the variables included in the second econometric model

Variable	Variable's description	Data source
Dependent variable (Y)	Personal remittances, received [current US\$] (PREM)	The World Bank
Independent variable (X₁)	Income inequality (GINI Index)	The World Bank
Independent variable (X₂)	Unemployment total (% of total labor force) (UEMPL)	The World Bank
Independent variable (X₃)	GDP growth (annual %) (GDP growth)	The World Bank
Independent variable (X₄)	Inflation, consumer prices (annual %) (INFL)	The World Bank

Source: Authors (2022)

The specification of the main econometric model to test the impact of income inequality on poverty of Western Balkan countries is as follows:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon_i$$

$$POV_{it} = \beta_0 + \beta_1 GINI Index_{it} + \beta_2 UEMPL_{it} + \varepsilon_{it}$$

Where:

POV – Poverty headcount ratio at \$1.90 a day [2011 PPP] [% of population]

GINI Index – Income inequality

UEMPL – Unemployment total (% of total labor force)

ε_i – stochastic variable (other factors not taken into account in this model)

POV - Poverty is a state or condition in which a person or community lacks the financial resources and essentials for a minimum standard of living. Poverty means that the income level from employment is so low that do not fulfill the basic human needs. Poverty-stricken people and families might go without proper housing, clean water, healthy food, and medical attention (Sonnenshein & Chen, 2020).

GINI Index – The GINI Index is a summary measure of income inequality. The GINI coefficient incorporates the detailed shares data into a single statistic, which summarizes the dispersion of income across the entire income distribution. It ranges from 0, indicating perfect equality (where everyone receives an equal share), to 1, perfect inequality (where only one recipient or group of recipients receives all the income). The GINI is based on the difference between the Lorenz curve (the observed cumulative income distribution) and the notion of a perfectly equal income distribution (Census Bureau, Gini Index, 2016).

UEMPL - All civilians 16 years old and over are classified as unemployed if they (1) were neither "at work" nor "with a job but not at work" during the reference week, and (2) were actively looking for work during the last 4 weeks, and (3) were available to accept a job. Also included as unemployed are civilians who did not work at all during the reference week, were waiting to be called back to a job from which they had been laid off, and were available for work except for temporary illness (Census Bureau, 2016).

The other two variables for the second econometric model are:

GDP Growth – The gross domestic product (GDP) growth rate measures how fast the economy is growing. The rate compares the most recent quarter of the country's economic output to the previous quarter. Economic output is measured by GDP (Barnier, 2021).

Inflation, consumer prices –The rate of inflation measures the annual percentage change in the general price level. Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly (The World Bank, 2021).

4. Empirical research results

Poverty is an economic problem that affects all groups within the population, but it does not affect all groups with equal frequency. Although in the whole world, the economic growth has raised the income of the typical family, the increase in inequality has prevented the poorest families from sharing in this greater economic prosperity (Mankiw, 2016). In this research paper we try to test the empirical results from the Western Balkan countries regarding the impact of inequality income on poverty.

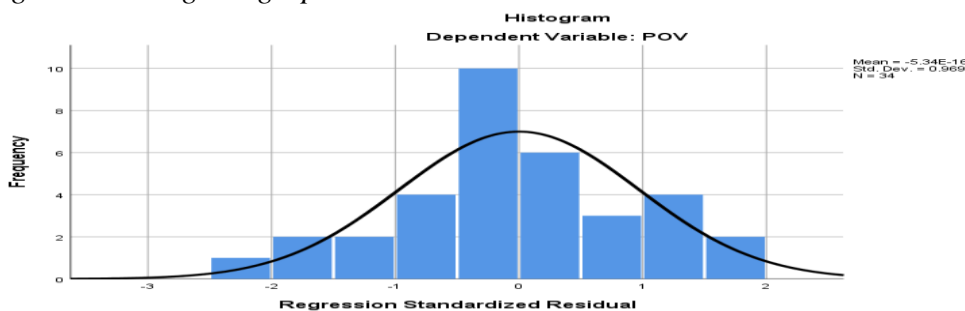
Table 3. Descriptive statistics of the variables included in the study

Descriptive Statistics			
	Mean	Std. Deviation	N
POV	2.744	2.3189	34
GINI Index	34.203	4.5359	34
UEMPL	21.189999961853026	6.642696154203280	34

Source: Authors' calculations in the SPSS program (2022)

Based on the results obtained from the descriptive statistics table 3, we note that from the analysis for a period 2012-2017 in Western Balkan countries with a total of 34 observations, the average of poverty is 2.744 with a standard deviation of 2.3189. The average of GINI Index is 34.203 with a standard deviation of 4.5359, while the average of the unemployment is 21.18 percent with a standard deviation of 6.64 percent.

Figure 1: Histogram graph



Source: Authors' conclusions in the SPSS program (2021)

Based on the graphical presentation of the histogram, we can see that the statistical data (Poverty, GINI Index and Unemployment) have a normal distribution, approximately symmetrical because the values of the central tendency show a high accuracy in the set of statistical data.

Table 4: Correlations

Correlations				
		POV	GINI Index	UEMPL
Pearson Correlation	POV	1.000	.743	.084
	GINI Index	.743	1.000	-.296
	UEMPL	.084	-.296	1.000
Sig. (1-tailed)	POV	.	.000	.318
	GINI Index	.000	.	.045
	UEMPL	.318	.045	.
N	POV	34	34	34
	GINI Index	34	34	34
	UEMPL	34	34	34

Source: Authors' calculations in the SPSS program (2021)

Based to the data presented in the table above we notice that the variables incorporated in the econometric model are correlated with each other. The Poverty headcount ratio has a high positive correlation with the GINI Index ($R = 0.743$), which means that with the increase of the VIX Index the value of the S&P 500 Index will increase also.

The value of the Pearson coefficient between the Poverty headcount ratio and unemployment is weak ($R = 0.084$), but it means that with the increase of unemployment the value of the Poverty headcount ratio will increase as well.

Table 5. ANOVA Table

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	115.930	2	57.965	29.211	.000 ^b
	Residual	61.514	31	1.984		
	Total	177.444	33			
a. Dependent Variable: POV						
b. Predictors: (Constant), UEMPL, GINI Index						

Source: Authors' calculations in the SPSS program (2022)

Based on the overall significance of the ANOVA table, we conclude that the whole model has accuracy since the significance value is less than 5%. **P - value (0.000 < 0.05).**

Table 6. Model significance table

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.808 ^a	.653	.631	1.4087
a. Predictors: (Constant), UEMPL, GINI Index				
b. Dependent Variable: POV				

Source: Authors' calculations in the SPSS program (2021)

Correlation coefficient and determination, their interpretation:

$$R = 0.808 = 80.8\%$$

The value of the correlation coefficient 80.8%, is a value that shows that the variables Y and X₁ have a strong positive correlation.

$$R^2 = 0.653 = 65.3\%$$

The value of the definition coefficient 65.3%, is a value that indicates that Y (poverty headcount ratio) has a medium degree of dependence on X₁ (GINI Index). So, for the value 65.3 GINI Index explains the Poverty headcount ratio.

Error term and its interpretation:

$$\varepsilon = 100\% - R^2 = 100\% - 65.3\% = 34.7\% = 0.347$$

The value of the error term is 0.347 which indicates the percentage of all other (external) variables that may affect the dependent variable (Poverty headcount ratio), but which are not taken into account in this econometric model. Based on the econometric results, we can see that the value of the error term 0.347, then we can conclude that this value of the error term is weak, because R-Square is robust and explains the model for 65.3%.

Table 7. Coefficients

Model		Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-14.433	2.327		-6.204	.000	-19.178	-9.688
	GINI Index	.430	.057	.842	7.602	.000	.315	.546
	UEMPL	.116	.039	.333	3.008	.005	.037	.195

a. Dependent Variable: POV

Source: Authors' calculations in the SPSS program (2022)

The equation:

$$POV_{it} = -14.433 + 0.430GINI\ Index_{it} + 0.116UEMPL_{it} + \varepsilon_{it}$$

Coefficients for the estimators: β_0 , β_1 and β_2 , and their interpretation based on the Coefficients table.

β_0 - estimators for β_0 if other factors are constant, ($X_1, X_2 = 0$) then the poverty headcount ratio will be -14.433unit. This statement is correct because the value of the significance is less than 0.05. P-value (0.000 < 0.05).

β_1 - estimators for β_1 , if GINI index increases by 1 unit, keeping all other factors constant, then the poverty headcount ratio will increase by 0.430 unit. This statement is correct since the significance value is within the statistical reliability interval, is less than 0.05. P-value (0.000 < 0.05).

β_2 - estimators for β_2 , if unemployment increases by 1 unit, keeping all other factors constant, then the poverty headcount ratio will increase by 0.116 unit. This statement is correct because the value of the significance is less than 0.05. P-value (0.005 < 0.05).

The main hypothesis:

H₁: The income inequality has affected the poverty of Western Balkan countries.

So, based on the P- value:

P – value < 0.05 » H₀ x, H₁ ✓

P – value > 0.05 » H₀ ✓, H₁ x

X₁ (0.000 < 0.05) » H₀ x, H₁ ✓ - We can see that based on the significance result, the null hypothesis is rejected and the alternative hypothesis is accepted, because the level of reliability for X₁ is less than P-value 0.05. (within the limits of determinability). So, we can say that the income inequality has affected the poverty.

The second hypothesis:

H₂: There is a direct relationship between the personal remittances received and

- a) GINI Index,
- b) Unemployment rate,
- c) GDP growth and
- d) Price Inflation rate in Western Balkan countries.

Table 8. Correlation matrix - Remittance

Variable	Pearson Correlation	GINI Index	Unemployment rate	GDP growth	Price Inflation rate
Personal Remittances Received WB	Pearson Correlation Sig.(2-tailed)	0.285 0.933	-0.317 0.016*	-0.105 0.402	0.555 0.003*

*The correlation is significant at the 0.05 level (2-tailed).

Source: Authors' calculations in the SPSS program (2022)

H_{2a}): The study of the relationship with the correlation matrix of Pearson Correlation between the personal remittances received and four variables that we addressed GINI Index, Unemployment Rate, GDP growth and Price Inflation Rate based on Pearson correlation analysis. According to Table 8, the relationship between the two variables may not be presented as direct, positive. Where the correlation coefficient value is 0.285 for Western Balkan countries, and also it is not statistically significant for a confidence level of 95%. Sig. coefficient value 0.933 is much higher than the accepted level of 0.05, it statistically proves that there is not a direct connection between the personal remittances received and the income inequality (GINI Index).

The hypothesis H_{2a} is rejected .

H_{2b}): According to the table above, the relationship between the personal remittances received and unemployment rate may be presented as direct, negative. The correlation coefficient value is -0.317 for Western Balkan countries. It is statistically significant for a confidence level of 95%. Sig. coefficient value 0.016 is lower than the accepted level of 0.05, it statistically proves that there is a correlation between the personal received remittances and unemployment rate.

The hypothesis H_{2b} is accepted.

H_{2c}): Between the two variables may not be presented as direct, negative relationship. The correlation coefficient value is -0.105 for Western Balkan countries, and it is not statistically significant for a confidence level of 95%. Sig. coefficient value 0.402 is higher than the accepted level of 0.05, it statistically proves that there is not a direct connection between the personal remittances received and GDP growth rate.

The hypothesis H_{2c} is rejected

H_{2d}): According to Table 8, the relationship between the two variables, personal remittances received and the price inflation rate, may be presented as direct, positive, with average intensity (the correlation coefficient value is 0.555) and statistically significant for a confidence level of 95%. Sig. coefficient value is 0.003 lower than the accepted level of 0.05, confirms the hypothesis and statistically proves that there is a direct connection between the personal received remittances and price inflation rate.

The hypothesis H_{2d} is confirmed for Western Balkan countries.

5. Conclusion

Poverty is one of the most critical issues that many countries in the world face it. This scientific paper has investigated the effect of income inequality on poverty in the Western Balkan

countries. In this study, the aim was to assess the correlation between income inequality and poverty rate, taking into account the influence of another exogenous factor: unemployment. We found that our data were robust and the model has a very high explanatory power, as shown by the R-square of 65.3%. But, also the relationship of personal remittances received with income inequality, unemployment, GDP growth and price inflation rate.

According to the main findings of this study, income inequality has negatively affected the poverty of the Western Balkan countries and such a result confirms the validity of the main hypothesis of this scientific research. Thus, during the analyzed period, in this study, it can be concluded that income inequality has had a negative effect on increasing poverty in the Western Balkan countries. Such empirical evidence is very important, as it makes a scientific contribution in the field of economics and government policy, because those countries are still developing and they should carefully manage the distribution of income, as a management of careful brings positive effects in the field of poverty.

Based on the econometric results of this study we can conclude that the other independent variable: unemployment, has had a negative impact on increasing the poverty of Western Balkan countries for the analyzed period. While regarding relationship between personal received remittances and income inequality, there was no direct relationship, with GDP growth and GINI Index. There was a direct relationship only with price inflation rate and unemployment rate.

Poverty is a major challenge for many countries that are still under development, such as the countries of the Western Balkans. It is worth noting that the governments of these countries should always implement strategic government policies that will ensure the well-being of the people and not live in hardship and poverty, so we recommend that they use anti-poverty programs and work incentives, so government policies should reduce poverty and increase employment.

The main limitation of this study is the lack of data for the sixth country in the Western Balkans: Bosnia and Herzegovina that could be included in this scientific research. Another lack of data has been observed for the years 2018, 2019 and 2020, therefore these years are not included in this analysis.

The scientific contribution of this paper lies in the fact that all econometric results are robust and findings of this research paper are comparable to the studies of other authors conducted for different regions. This study will be a good reference base for future studies in this field, and its findings might serve for policy makers and other researchers.

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LEADERSHIP QUALITIES AND SATISFACTION WITH THE INTERNAL COMMUNICATION IN THE ORGANIZATIONAL COMMUNICATION AFTER COVID 19 PANDEMIC

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Abstract

The aim of this paper is the research of the triadic relationship between change of values, leadership and satisfaction with the internal communication of the participants in the organizational communication in military organizational systems. The conceptual model itself in this research was developed based on theoretical assumptions. The limitations covered by this research relate to the manner and methods of data collection, as well as the characteristics of the sample itself. It should be noted that the variables describing the variables in this study were measured based on the subjective assessments of the respondents. The findings of article is the leadership potential is satisfied with internally communication organizational systems.

Key words: Internal communication, satisfaction, organizational communication, leadership

Introduction

The purpose of this paper and research project is to test the effects of the entity towards mitigating variables in the triadic relationship between values, leadership qualities and satisfaction with the internal communication of the participants in the organizational communication in organizational units

We live in an age where communication is very important. The modern world is dynamic and full rapid change. New times bring new habits and new lifestyles. And no one is waiting! If in our private lives we can allow ourselves to slow down a bit, u in today's business environment this is unacceptable. The right information at the right time - the trump card is in the business race, and a quick exchange is necessary for a successful finish information with internal and external groupings. Effective communication is the foundation efficient business and there is no dilemma today. It's no longer a matter of choice, it is the inevitability of life, the question of survival on the business scene. Contemporary business scene is dynamic and accessible to everyone because the planet Earth has become a global village through which information and people travel more and faster than ever. Geographical distance of the station an insignificant factor, borders between states disappearing, and the need for communication today is a necessity. Noun, the national border is relativized, and according to McLuhan prophecy "disappears" and is lost. Divisions also disappear, language barriers are relativized, and modern, universal and more efficient models of communication are more and more present. Today, communications, are the dominant factor and are a reliable partner for the development of the whole civilizations, because they are represented as tools, universal means and weapons in all social spheres and human activities.

Turbulent changes in all social spheres are the “culprits” which is a leadership approach a necessity in the modern world (Amer Qasim, Faten Kharbat, 2018). Ability-based leadership is an imperative in modern times organizations. Leaders in the army, who have top abilities at their basè skills, contribute to creating conditions for improvement in organizational systems recognized different organizational outcomes in practice as the ability to improve performance, training to perform tasks in the field of security and protection of all citizens and the whole territory, as well as satisfaction with communication and work. One of useful outcomes of the globalization of our planet is a clear sense that resources are limited. When as long as there is finiteness of resources, the quality of one's leadership is a matter of more, and if it is quality is more important, then it requires its continuous development and progress with respect high moral values. Human beings, and therefore leaders, learn about morality and moral behavior over time. The problem that this dissertation deals with is the identification of the impact of each of the above the dimension of values and the dimension of authentic leadership on each of the above factors pleasures of internal communication, which together form a complementary triptych elements (values, authentic leadership and satisfaction with internal communication). We will also find out which dimension of authentic leadership decisively influencès satisfaction with internal communication, and through these five moral values in organizational systems. The focus of the research is to explore all relationships and connections between the above phenomena and explicitly present all the specifics of these relations in organizational compositions. The aim of this paper is the research of the triadic relationship between change of values, leadership and satisfaction with the internal communication of the participants in the organizational communication in organizational systems. Values and leadership qualities in research will be viewed as predictors of satisfaction with internal communication in organizational systems. According to the current understanding of leadership among the prominent researchers in the field, there is a significant increase in interest in new, on a value-based concept of leadership, called authentic leadership.

2.Theoretical bacground

2.1 Internal function communications

In the literature, many authors, according to Berlogar, in defining the internal function communications are approached differently, but basically everyone agrees that the function is internal communication in creating stability within the organization and reducing uncertainty and insecurity among employees (Lauren Siciliano, 2020). Harris and Nelson report that internal communication is one of the "most dominant and important activities in organizations "(Hayase, Lynn Kalani Terumi, , 2009).). Skerlep points out that through the internal communication program, managers inform employees about important issues for the organization. Also, conduct training for employees and give them pathways to follow the mission, purpose and goals of the organization (Reis Neto, M. T., Silva, L. C. F. da, & Ferreira, C. A. A., 2018) report that employees are key resources in organization, and to give meaning to the same organization and strengthen it through communication (Marcin JAKUBIEC, 2019). Berlogar believes that the key four specific functions are internal communications:

- 1) "strengthening and expanding the goals of communication;
- 2) coordination of activities of employees in the organization;
- 3) storage of superiors with feedback;
- 4) socialization of employees through organizational culture ”(Berlogar, 1999).

For internal communication, it is considered to be one of the main strategic tools of the organization, built on knowledge and information. A group of authors point out that Leaders in the organization internal communication at any time can gain active support from employees because it has a vital role in explaining organizational tasks, clarifying rules, creating and maintaining interpersonal relationships among employees). The essence of effective internal communication in organizational systems is that "the right people get the right information and content and in scope, at the right time and in the right way. " For internal communication in organizational systems are considered to act as glue between employees and the organizations themselves. Cutlip, Center and Broom, report that it is for the establishment of good

There are seven important factors among employee relations:

- "trust between employer and employees;
- timely information with free flow;
- satisfactory status and participation of each individual;
- continuity of work without conflicts and disputes;
- healthy environment;
- entrepreneurship and innovation;
- optimism for the future "(Cutlip, Center & Broom, 2000: 288-289).

Leaders in the organizational parts of the MoD and the Armed Forces who strive for excellence in relations and in their work, they systematically approach the establishment of internal communication. Prerequisite for

Achieving "excellence" in communications is: "internal communication must be understood as a necessary process, and not as a one - time goal without beginning and end "(Gruban, Vercic & Zavrl, 1998: 625). They also report that a condition is needed to achieve excellence in communication, the following:

1. When it comes to internal communication styles, (Eva Tariszka- Semegine) distinguish five different styles:1. "style of instruction (Do it!) - implies that employees of their own superiors (from top to bottom) receive information and instructions for their work;
2. style of information (Do it, for, ...) - where employees are helped to understand their function and role in the organization;
3. Consultative style (Let's talk about how to do it ...) - they are employed interactive, communication is two-way and there is the possibility of employees express their views and views on organization and work;
4. including style (How would you do it?) - implies a two-way process in which information goes from bottom to top. Yet, unlike the first style, employees have the opportunity to express their suggestions for solving the problem, which it allows them to get better acquainted with the organization and gain some personal experiences;
5. participatory style (How could we do that? How could it be done?) - In this style, employees are also allowed to participate in deciding on all important issues " (Lauren Siciliano, 2020). Observed within an organization, internal communication is sophisticated a discipline created by experienced officers who possess the ability to listen as they breathe their employees, that is, the greatest capital and value of a organization, and that is human capital. When it comes to types of internal communication, they are recognized in the literature four types of internal communication:
 1. informative communication - refers to the transmission of precise information;
 2. directive communication - is represented in regulated organizations by the old-fashioned power structure;
 3. interactive communication - is aimed at creating support;

4. indirect communication - used when management wants to speed up changes in the organization.

The goal of internal communication according to Strohmaier & Mihelec is, unhindered flow information through and between employees in the organization, enabling two-way communication, introducing and informing employees about important goals organizations, employee identification with the organization, and value transfer organizations per employee (Reis Neto, M. T., Silva, L. C. F. da, & Ferreira, C. A. A., 2018). Objectives of internal communication according to Dobrijević & Miljević are:

- "transmission of instructions or requests along the line of command;
- informing staff about the new company policy, agreements, development, processes;
- seeking information from employees in the company that will help with making decisions or receiving feedback in the analysis of the situation;
- encouraging or convincing employees of certain facts or motivating them employees to work as individuals or part of a team;
- sending evidence, answers and information up the line of management and
- transmission of proposals and ideas along the line of management " (Diana-Maria CISMARU, Cristina LEOVARIDIS, 2013)

2.2 Types of internal communication of leaders and associates

At the end of the last century, there were great changes in the way and use of funds internal communications in favor of electronic means and the so-called. smart digital device. This development also contributes to increasing the amount of information transmitted within organizations and among themselves. Strategic approach in internal communication planning is inevitable, and the intranet, i.e. internal network within the organization, has become the main a means of communication between leaders and associates. Effective internal communication in organizational systems is the difference between successful and unsuccessful organizations. Employees need to feel part of the team, because otherwise the organization risks employees leaving it or reflecting on their decline motivation, which is reflected in the decline in morale. Communication in these systems she is exposed to many challenges. The reality is that not everyone should be equal range of information, and in most cases this is not useful to organizations. Open and honest exchange of information within organizational systems improves employee motivation and is the best way to prevent conflict.

The emergence and development of new technologies and new media of internal communication is significant increased the amount of information available to employees. A feature of today's organizations is a large amount of information circulating within it. In that vast ocean information, useful and useless, ie desired and unwanted information appear.

There are many different classifications and criteria in the literature based on it it is possible to share communication. The leaders in the organization play three roles as communicators roles. Superficially, communication seems to be seemingly simple - writing emails or sending a letter. Leaders need to understand all the components of the communication process to make them could be effectively applied. In order for leaders to have influence in the communication proces careful planning, management and clarity of the message are key factors in this process.

Unfortunately, a lot of leaders put a lot of effort into the communication process, focusing only on message delivery, while neglecting the vitality of planning and management communication process. As a builder of communication infrastructure, he is a leader in obligation to consider a number of issues such as (Hayase, Lynn Kalani Terumi, , 2009).):

- organizational culture;
- current communication climate;

- identification of various changes and impacts with stakeholders;
- integration of communications with other human resource practices.

According to the use of symbols, communication can be divided into verbal and non-verbal, while in accordance with the organizational structure there are formal and informal. For organizational systems and every organization in general is the last division the most significant.

3. Methodology

The research was conducted in a period of five months, by distributing questionnaires, ie. delivery by mail and delivery of questionnaires electronically - online. At 550 members of services organizational systems were first sent two questionnaires: Questionnaire Fr. authentic leadership and the Value Questionnaire. We received feedback from 412 respondents (response rate is 74%). In the second part of the research to the respondents who answered the first two questionnaires, the Internal Satisfaction Questionnaire was sent communication and thus a final panel of respondents was formed (Podsakoff, 2003), them 334. In the second part of the survey, the response rate was also high (81%).

3.1 Variable

Independent variables in our research are the values of the respondents (operational defined MFQ) and attitudes towards authentic leadership (operationally defined questionnaire OR). The dependent variable in our research is satisfaction respondents by internal communication and it is operationally defined by the CSQ questionnaire.

3.2 Research hypotheses

Based on the subject and the problem that this dissertation deals with, the following are formulated hypotheses:

HO: Values and leadership affect communication satisfaction.

X1: Values of employees in organizational systems operationally defined

Heidt's theory of morality has a statistically significant effect on their satisfaction internal communication.

H2: Leadership characteristics of employees in organizational systems are statistically significant affect their satisfaction with internal communication.

3.3 Sample of respondents

From the table we can see that in our research, male respondents predominate (63.5%), while the survey also included 36.5% of female respondents. Based from these data we can say that the gender structure of the sample corresponds to the gender structure population of the organizational system.

Table 1 Sample of research

	Frenquance	Procent
High school education	102	33.11
Higher education	32	10.39
University degree	121	40,07
Completed postgraduate studies	53	17.20
Total	308	100.0

4. Analyses and discussion

Half of our respondents are respondents who are highly educated (university degree = 40.07% and those with completed postgraduate studies = 10.39%). The other half of our respondents those with a high school diploma (17.20%) and those with a higher professional level of education are our sample. ready (13.5%) so that after.

Table 2satisfaction with internal communication our respondents are most satisfied with communication with superiors

	As	Number
Com. with a superior	6.6218	308
Com. with employees	6.4142	308
Com. integration	5.6570	308
Comm. organ. goals	6.2265	308
Media quality	6.1677	308
Com. in the company	6.1683	308
Feedback	5.8099	308
Self-awareness	3.2854	308
Object. at don. decision	3.2537	308
Transparency in com.	3.4172	308
Moral perspective	3.4416	308
Sensitivity to others	25.8750	308
Group Loyalty	23.7237	308
Fairness	25.9737	308
Relation to Authority	23.6217	308
Cleanliness	24.3586	308

From the table we can see that when we talk about satisfaction with internal communication our respondents are most satisfied with communication with superiors (As = 6.62) and communication with employees (As = 6.41). They are the least satisfied with communication integration (As = 5.65) and feedback (As = 5.81).

The most pronounced aspect of authentic leadership among our respondents is the moral perspective (As = 3.44), and the least objectivity in decision-making (As = 3.25). Generally speaking everyone aspects of authentic leadership among our respondents are at about the same level because the range between the most pronounced and the least pronounced aspect is only 0.15. Everything the values are average, so the question is whether there is an authentic leader among them.

Sensitivity to others is most pronounced in our respondents (As = 25.87), and is least expressed dimension relation to authority (23.62).

4.1 The influence of gender on variable research

From the table we can see that there are differences in satisfaction with internal communication, values and authentic leadership by gender, but at the level of statistical significance only communication in accordance with organizational goals (see table).

In order to confirm or reject the research hypotheses, we subjected the obtained results to SEM analysis³⁷ (structural modeling). Strictly modeled analysis was performed in WARPLS 4.0. This software tool allows the establishment of nonlinear relationships between the variables included

in the structural model. Basic parameters SEM analyzes indicate that the model we proposed is statistically significant and that they are all relevant parameters that indicate the significance of the analysis within which make the model acceptable. The table provides an overview of these parameters.

Table3 : Basic parameters of the structural model

APC	0.214	p= 0.047
AVI	1.021	Low
VIF	1.0214	Ideal
T GoF	0.156	Ideal
SympPR	1.014	Low
R-squared	1.123	Ideal
(NLBCDR	0.645	Adaptiv

The obtained results indicate that both values and authentic leadership are statistically significant affect the satisfaction of respondents with internal communication (table and graph).the more pronounced the characteristics of authentic leadership, the less the satisfaction with the internal communication. The values have a positive path coefficient (0.147) and we can say yes the more pronounced the values of our respondents, the more their satisfaction is internal communication greater. Based on the magnitude of the path coefficients, we can say that the impact values on satisfaction with internal communication greater than the impact of characteristics authentic leadership. When we talk about the magnitude of the impact effect as an important parameter we can also say that values have a greater effect on internal satisfaction communication. But the magnitude of both effects indicates that the impact of value on satisfaction internal communication is mediocre, and the magnitude of the impact of leadership characteristics on satisfaction with internal communication is weak, so no matter how independent variables statistically significantly affect the dependent variable, the independent variable which refers to values has a much greater impact on internal satisfaction communication.

Table 4: Results of SEM analysis

	Liderships	Value	
Communication	-0.128	0.147	P Coefficient
Communication	0.009	0.003	p
Communication	0.017	0.022	efect

The obtained results confirm the general hypothesis of our research that values and leadership affect satisfaction with internal communication. The obtained results also confirm i both individual hypotheses of our research on the individual influence of dimensions authentic leadership to the satisfaction of internal communication, as well as the impact of morality on the same. The organizational system that was the subject of our research in its own way characteristics represents a very specific work environment in which the relationship subordination is very pronounced and very important for its functioning. Internal communication is in itself important in order to achieve the efficiency and effectiveness of his work. in a situation of pronounced subordination it is normal to express the characteristics of the authentic leadership does not affect what the obtained results indicate, which is authentic leadership the satisfaction with internal communication is more pronounced. The structure of the sample itself in which is dominated by respondents in executive positions supports this claim, but it is also probably influenced the results obtained because we had a larger number of management positions the path coefficient of leadership influence would probably be positive as well. It is also in research a

small number of officers participated, with the characteristics of authentic leadership being more pronounced than with ordinary clerks.

The relationship between leadership and internal communication is not linear. Respondents with weak leadership are very satisfied internally communication. An increase in leadership characteristics diminishes internal satisfaction communication and respondents with average leadership qualities are the least satisfied with internal communication. Respondents with above-average leadership characteristics are on average satisfied with internal communication.

The organizational system is the place where internal communication is set up for work achieving effectiveness and efficiency on the principle of subordination so authentic leaders can only be partially satisfied with it.

When we talk about values, the situation is much clearer: more pronounced values, more pronounced satisfaction with internal communication. We can see from the graphs that this is it the relationship is almost linear.

Respondents with low moral values are dissatisfied with internal communication and as their values approach the average there is a sharp jump in satisfaction internal communication so that we can say that respondents with values are few below average most satisfied with internal communication. So are respondents with above average values are very satisfied with internal communication. This the paradoxical situation can only be explained by the willingness of the respondents from high expressed values to sacrifice their satisfaction for the sake of efficiency and effectiveness collectives where the characteristics of internal communication are no longer so important to them.

CONCLUSIONS

The motive of this article is the desire to explore and understand the triadic relationship between different dimensions of values, authentic leadership and satisfaction with the internal communication of participants in an organized system. The study uses SEM analysis to determine the relationship and influence between values and authentic leaders with satisfaction with internal communication, in the direction of understanding and empowering them, as well as mitigating the effect of procedural justice in both directions. The conceptual model itself in this research was developed based on theoretical assumptions. The limitations covered by this research relate to the manner and methods of data collection, as well as the characteristics of the sample itself. It should be noted that the variables describing the variables in this study were measured based on the subjective assessments of the respondents. Also, the established relationships and relationships between variables could be described more precisely through longitudinal (repeated) research, for which the general rule is that qualitative and quantitative data are collected during repeated research. Based on the research results, the possibility of considering other research models and concepts is recognized. The results of this research indicate that future research should include other variables, such as performance and commitment, delegation and authority, motivation, rewards and penalties and mutual trust, etc. This research represents the values and leadership qualities represented. among respondents in the environment. Based on the results obtained in our study, we can conclude the following:

- There is a connection and mutual influence of leadership, values and internalcommunications with respondents in organizational systems;
- Respondents with low leadership potential are satisfied internallycommunication in organizational systems;

- Respondents with strong leadership abilities are on average satisfied internal communication in organizational systems;
- Respondents with below average values are most satisfied internally communication in organizational systems,
- Respondents with the most pronounced values are also very satisfied with the internal communication;
- Respondents with low leadership potential and below average values are most satisfied with internal communication in organizational systems;
- Respondents with strong leadership abilities and strong values are partially satisfied with internal communication in organization systems.

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IMPACT OF MARKETING OF THE REPUBLIC OF CROATIA ON PANDEMIC TOURISM RESULTS

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Abstract

The COVID-19 pandemic in 2019 and 2020 had a strong impact on all segments of life, and especially on economic cycles. Since tourism is an important part of these cycles, and represents one of the most important activities for the Republic of Croatia, there is a need to define the basic levers that drive them. Different marketing approaches play a special role in understanding tourism, which can be a supporting force for the development of tourism in general. In such crisis conditions, the habits and priorities of consumers change, and the need for a different approach is imposed.

The purpose of the work is to investigate specific marketing approaches that enabled the Republic of Croatia to record better tourism results than its competition. The paper used the methods of desk research, analysis of primary and secondary data and comparison of tourist results of competing countries.

The research determined that the optimization of marketing investments and the network of HTZ representative offices abroad with the tactics of selecting target investment areas, tools and tactics, contributed to better results.

Keywords: COVID-19, economic cycles, tourism, marketing approaches

INVESTMENT ABILITY AND ITS IMPACT ON NON-FINANCIAL PERFORMANCE: THE CASE OF SLOVENIAN FIRMS IN THE PERIOD 2010–2017

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Abstract

This paper, which is derived from a comprehensive research based on the microeconomic theory of investment and the theoretical approach to measuring the non-financial performance of firms, presents a conceptual model to define, assess, and measure the impact of firms' investment ability on business performance. The authors first define investment ability as a latent endogenous construct in their conceptual model. The theory of resources or the theory of dynamic capabilities is used as a theoretical framework. The authors define the variables of investment ability based on that part of the theory which refers to the investment activity of firms and which, both directly and indirectly, provides guidelines for defining the investment ability of a firm. These are starting points that indicate the ability of the top and middle management of firms to create a quality firm development strategy, to plan investments well and realistically, to create a quality SWOT analysis, to research markets, technology, and the business environment well, to recognize and exploit investment opportunities, and several other dynamic capabilities. These are basically observed measurement variables (indicators) determined by investment ability. On the other hand, the subject of business performance in the conceptual model is in this paper defined solely as performance measured by the relevant non-financial indicators, such as: new products/services related to the new investments were marketed faster than those by the competition, the performance of the new products/services related to new investments was high, new investments increased the market share of the products/services, customer satisfaction after the investments are made, and some others. Several research hypotheses are tested on an extensive sample of Slovenian firms. A statistically significant correlation between investment ability expressed by some of the above stated variables and non-financial performance indicators is found for the period 2010–2017. This correlation is particularly strong with the performance of new products/services related to new investments, increasing the market share of products/services related to new investments, and employee satisfaction after the investment. The authors suggest that the interest of the managers be increased by the appropriate recovery of their consciousness and education in the sense that they consider the resources which define and influence investment ability differently than they do currently. Management should take over their control, so that they can be managed properly.

Key words: investment ability, corporate strategic investment, resource-based theory, dynamic capabilities, non-financial performance

JEL: C12; D25

1. Introduction

The purpose of this research is to determine how investment ability influences the business performance of firms. This can also be considered our research question. First, we define investment ability as a latent endogenous construct in our conceptual model. The microeconomic theory of investment, the theory of resources, and the theory of dynamic capabilities are used as a theoretical framework. At the very beginning, we choose and set the determinants (variables) of investment ability based on that part of the theory which refers to the investment activity of firms and which, both directly and indirectly, provides guidelines for defining the investment ability of a firm.

Second, the subject of business performance in our conceptual model in this paper is defined solely as performance measured by the relevant non-financial indicators, for example, new products/services related to the new investments marketed faster than those by the competition.

We explore this issue on the case of Slovenian firms, asking, specifically, how successful they were with their investments in the period from 2010 to 2017, which should also be the result of their investment ability. The reason why this topic has been chosen as a research subject lies in the fact that in spite of the relatively high capex being spent in firms in the last decade, quite a few of these firms have not performed well for many years.

If we suppose that at the time when the investment decision was made the investment projects as such had been assessed as profitable and economically justified, i.e., economically sound, well set up and promising for the investors, then the following questions might be raised: Did these investment projects turn out to be as efficient as anticipated or as they should have been? To put it another way, did these investments improve the business performance of the firms in question? Similarly, investment project implementation with respect to what had been planned is also interrogated, for an example regarding the suitability of the used technology and equipment, the planned investment budget, sufficient and reasonable financial resources, reliable market projections, agile management, a qualified labor force, etc. There is also doubt about achieving the required rate of return on investment projects and other relevant financial ratios by which business performance is measured and which are expected to be met by various stakeholders, mainly owners and creditors. However, determining and measuring the financial performance of investment ability is not the subject of this paper.¹

¹ The results of our research on how investments in tangible fixed assets influenced (or correlated with) the financial performance of select firms, measured by several relevant financial ratios, have been published in the article “Impact of Corporate Investment on Business Performance: The Case of Slovenian Firms for the Period 2000–2017” (Bukvič & Tekavčič, 2022).

The research problem in our study can be addressed operationally in the following way. We have based our research on resources as the key drivers by which successful investment project implementation and a sustainable and profitable growth of a firm should be assured. As strong evidence for such a statement, we rely on the theoretical standpoints and conceptions of various authors. From the perspective of operability, we set up a simple conceptual and measurement model from which a *basic research thesis* has been erected: *investment ability has a positive impact on business performance measured by non-financial indicators*. So far, the existing research has mainly considered the effects of individual investments and their performance, ignoring how investment ability influences the non-financial business performance of firms. Our research is grounded on a comprehensive view of this issue, which can be considered a novelty in the field. The potential contribution of our paper is to highlight the impact of Slovenian firms' investment ability on their non-financial business performance in an 8-year time period, which is another novelty in the area of corporate investment activity.

Based on a literature review, we have developed a simple conceptual and measurement model to study the performance of select firms deriving from their investment ability. We established a set of non-financial indicators and found their correlation with investment ability, i.e., with its individual determinants. We then tried to find out whether these correlations are statistically significant and how strong they are. Our scientific contribution in this field is an integral approach, and our conceptual and measurement model is empirically tested on a rather big sample of Slovenian firms.²

The relevance of this research is attested to by the fact that investment activity is crucial for the firms' sustainable growth and their long lasting performance. Furthermore, the interest of managers should be increased by the appropriate recovery of their consciousness and education in the sense that they might consider all the resources which define and influence investment ability differently than they do currently. Investment ability manifests itself in investment implementation and business performance. For this reason, it is very important that firms do not pay attention only to the pre-investment period, when they make investment decisions, but also to the implementation of their investment and to the post-investment period, when they have to follow up on and measure the business results of their investments in order to find out how successful and efficient their investments have been. In this study, it is especially relevant to know what non-financial indicators are influenced by investment ability. All this is the authors' important contribution to the existing body of literature.

In the theoretical part of the paper, the concepts and basic issues related to investment ability and non-financial business performance are presented. The scientific method of description and the scientific methods of classification, comparison, analysis and synthesis are used. A central issue in implementing this investigation is to find out whether there exists a correlation between investment ability, i.e., its individual measuring variables, and the non-financial performance of firms, i.e., its individual indicators.

The empirical part of our research is based on the use of several research methods. As a basic method of our empirical research work, the statistical method of primary data collected by a questionnaire is used. Only the firms in the non-financial sector were observed. For testing the hypotheses, the Chi-square test, t-statistics, and linear regression were used.

² In the scope of our research, we have also studied the behavior of firms as investors, showing how firms as investors were able to exploit investment opportunities, what their prevailing motives to invest were, what their investment growth in the chosen study period was, how efficient their investment implementation was, and what economic effects they achieved by their investments in tangible fixed assets. See the results in Bukvič & Tekavčič (2022).

At the end of this paper, we summarize the main findings of our research, primarily the results of testing our research hypotheses. Limitations are also exposed, as are guidelines for further research work in the field of studying non-financial business performance due to investment ability.

2. Theoretical and conceptual background, and research hypotheses

In the theoretical frame of our research, a literature review has been conducted to support the relevance of the research question. First, focus is placed on the definition of the investment ability of a firm. Second, the meaning and relevance of the non-financial performance of a firm is explained. Third, a conceptual and measurement model of the impact of investment ability on non-financial performance is set up, and finally the research hypotheses are exposed for testing.

2.1. A literature review from the perspective of the relevance of the research question

In this paper we tend to show in a systematic and critical manner how the existing literature deals with the relationship between investment ability and a firm's performance, how it measures the effects of investment ability on non-financial business performance, and to what conclusions the researchers have come so far studying this issue. Only on this basis can one better understand the contribution of this paper, how this paper is attached to the findings of the existing research work, what this paper essentially adds to the existing body of literature, and why this research question is relevant.

2.1.1. Investment ability of the firm

In our research, we study how investment ability affects a firm's business performance from the point of view of achieving a competitive advantage based on resources and dynamic capabilities. We assume that the success of the firm's operations depends on how successful the firm is in utilizing the investment in the process of maintaining and increasing its core competencies. According to Amit & Schoemaker (1993), capabilities are the ability of a firm to use resources through organizational processes. Grant (1991), on the other hand, views capabilities as the ability of a group of resources to perform a task or activity, such as an investment. It is about the skills and knowledge of the employees. If we connect the specific professional knowledge and experience of the employees with the investment ability of the firm, we quickly realize that it is the least tangible and very difficult area for analysis.

With this, we have made a short introduction to the presentation of investment ability as the key construct in our conceptual model, wherein this latent construct is endogenous. Investment ability refers to all types of knowledge that are necessary before the investment and during its implementation. Investment ability includes the ability to assess the feasibility and profitability of an investment project, the ability to define its detailed specifications, the required technology and the most favorable sources of financing, the ability to negotiate in connection with the procurement of productive assets (cost aspect and financial aspect), the knowledge and skills necessary for the construction of the facility and the installation of equipment, the knowledge and skills to carry out the entire engineering phase, the ability to acquire and train the appropriate personnel required by the investment, and finally the ability to plan the basic process (Morrison, Pietrobelli & Rabellotti, 2008).

Let us explain right away that in this paper we are dealing with strategic investments and, within their framework, with investments in tangible fixed assets only. Whenever investments are analyzed at the corporate level, the first question is how much capital the firm would like to use,

taking into account the given costs and returns of the use of capital and the level of the product that is intended to be produced. So what determines the desired capital stack, i.e., the stack of capital that the firm would like to have in the long run? Of course, a firm cannot immediately adjust capital to the level it needs in production. This requires a certain amount of time. We are talking about the level of adjustment by which the firm in question adjusts from the existing capital stock to the desired level of capital. The level of adaptation determines the level of investment. Investments therefore express the level of adaptation of the economy to the desired state (Senjur, 1995). Such an adjustment at the micro level is, for example, the technological modernization of production processes, say robotization in firms. Today, we are facing the 4th industrial revolution, with cyber-physical systems, the Internet of Things (IoT), artificial intelligence (AI), and, above all, rapidly growing production efficiency.

From the point of view of Value Based Management, business owners are interested in which strategies create value and which do not. They should be guided by business logic. Weissenrieder (1998) classifies investments into two groups: strategic and non-strategic investments. Strategic investments are those whose goal is to create new value for owners and which ensure the growth of the firm. Non-strategic investments are those that maintain or preserve the value created by strategic investments. Strategic investments, such as investments in the development of a new product or investments in the acquisition of new markets, are followed by several non-strategic ones. A strategic investment can be an investment in tangible fixed assets, which is the subject of our research, or in intangible assets. It is irrelevant whether it is an investment expenditure or not. Everything that counts as a cash expense in the firm is related to the creation of new value, which, according to Weissenrieder (1998), can be defined as a strategic investment.

Experts who work in firms with the implementation of concrete investment projects, and with the exploitation of newly introduced technologies as a result of the implementation of investments, need technical expertise both within the firm itself and outside it. Peljhan argues that knowledge of the firm's technology is crucial for the effective connection of new and old systems and the optimization of the firm's investments in technology (2012: 83). If the development personnel and technologists in the firm are well acquainted with the business needs and business processes, they have a better insight into individual technological needs in the future. How they respond to unplanned requests is also important. If they know the firm's operations, tactics, and goals, they can roughly anticipate future needs. The alignment of the firm's strategic plans with the organizational goals and vision depends on the knowledge of the employees involved in the planning and resource management process.

According to Capon & Glazer (1987), technical knowledge refers to the knowledge needed to prepare applications using available technology and knowing how to use these applications to prepare products and services. Technical knowledge enables firms to successfully manage technical risks in connection with individual investments. Barney & Clark's claim (2007) pertaining to the development of information technology can be generalized to all other technical areas in the firm: although technical skills are important in the development of IT, they are often not the source of a lasting competitive advantage. These skills are certainly valuable, but they are not heterogeneously distributed across firms. If they are, they are usually highly mobile. Firms that do not have the required specific technical skills needed to realize their investments can hire technical consultants and contractors.

Technological capabilities and linkage capabilities are tightly connected to investment ability. Technological capabilities are the knowledge and skills – technical, managerial or organizational – that firms need in order to effectively use the hardware (equipment) and software (information) provided by technology and to carry out any process of technological change (Morrison et al., 2008). Firm capabilities are firm-specific institutional knowledge, which consists

of individual knowledge and the skills and experience of employees acquired over time. Technological change is the result of purposeful activities carried out by firms with technological efforts. This knowledge is neither exogenous nor automatic. Individual effort is needed to make a series of hidden (tacit) technological elements explicit and to make most of the technological effort at the limits of a given technology. There is much greater effort that must be made by each firm to acquire knowledge, to implement it, to absorb it, and to build it up to the level required in production (Morrison et. al., 2008).

Technology simply cannot be transferred to a firm as a physical product. Its effective implementation must include important building blocks. The mere purchase of equipment and instructions for its management, patents, plans or “blueprints” do not guarantee that the technology will be effectively used and exploited. Constant great efforts are needed to improve technical knowledge and skills, to acquire the necessary equipment and relevant knowledge. Learning plays a central role here, and success depends on the efficiency with which markets and institutions function under conditions of uncertainty. If costs, uncertainties, and knowledge leakage from the firm are very high, coordination with other firms in the procurement supply chain is extremely difficult. Simple knowledge cannot be learned even if it were effective. Following Lall (1990, 1992, 2001), certain principles apply to technological capabilities when it comes to different levels of complexity. Thus, Lall distinguishes between investment capabilities, production capabilities, and linkage capabilities.

Investment capabilities have already been presented. Select core capabilities must be developed by the firm and expanded accordingly over time. Moreover, many technological capabilities are interconnected and partially overlap; there is strong interdependence between them. Production capabilities include the knowledge and skills needed for an efficient operation of the production plant with the given technology, and for its improvement over time. Part of these capabilities are capabilities related to process, product, and industrial engineering. Among the infinite number of operations that require appropriate knowledge and skills are the assimilation of process and product technology, their adaptation and improvement, troubleshooting, quality control, expansion of production capacity, work flow planning, inventory control, productivity monitoring and the coordination of different production phases and departments, and process and production innovations that follow basic research activities (Morrison et al., 2008).

Linkage capabilities are required due to high transaction costs. In limited and inefficient markets, firms often develop special market linkages that correspond to their efficient and rational strategies. Therefore, special knowledge and skills are needed to be able to establish technological connections between firms, between firms and suppliers, and with the scientific and technological infrastructure. In each group, there are technological capabilities with different levels of technological complexity. These are used for routine, flexible and repeatable or innovative and risky activities (Morrison et al., 2008). According to Lall (1990), different levels and depth of technological capabilities explain different levels of industrial performance in individual countries. Of course, the described approach does not assume that all firms will build capabilities in a linear sequence of processes, nor does it mean that firms will start and end at the same stages (Figueiredo, 2006).

The competitive lag of a firm in a certain field due to inadequate and insufficient skills forces the firm to look for certain solutions. The firm can train its own personnel for certain technical skills, it can hire new personnel who already have such skills, or it can direct its own personnel to educate themselves in order to acquire the appropriate technical skills. Technical skills are of course very valuable for firms, but unfortunately they usually do not meet the additional conditions of heterogeneous distribution and high immobility (Peljhan, 2012, p. 84). It is for these reasons that it is highly unlikely that technical knowledge can be used to gain a lasting

competitive advantage. According to Barney & Clark (2007), a proper resource provisioning process, which manifests itself in providing the right resources at the right time, is key for obtaining a sustainable competitive advantage.

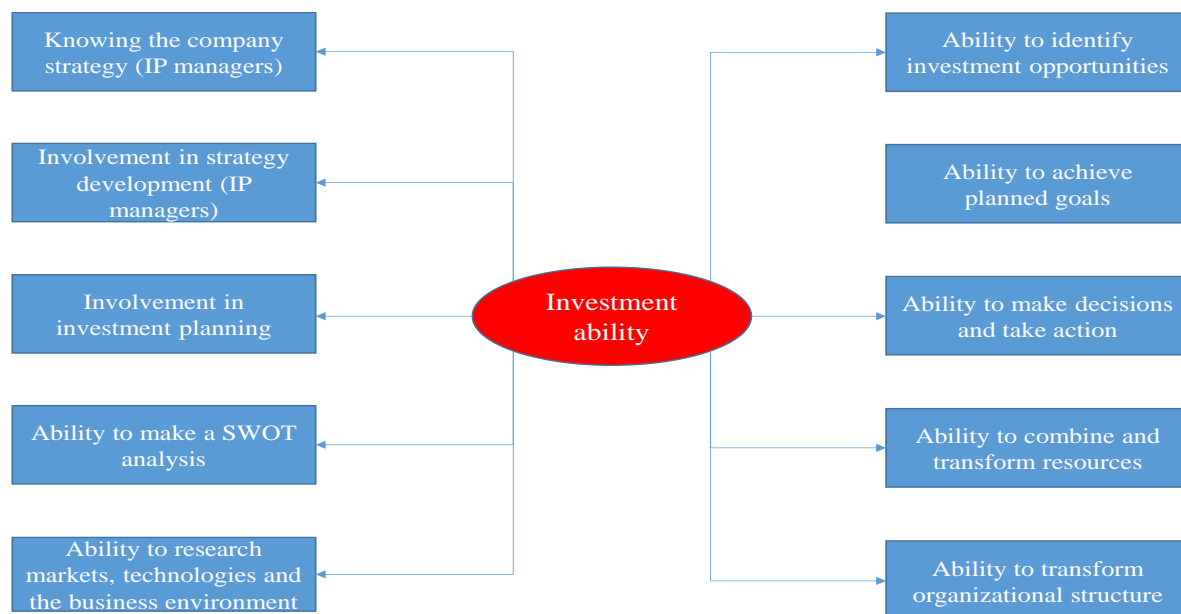
Let's also look at the relationship between a firm's resources and its capabilities in the light of its investment ability. There is a significant difference between firm resources and firm capabilities. Resources are inputs to the production process. The individual resources of a firm include equipment, knowledge and skills and the skills of employees, finances, intangible rights, such as patents, trademarks, etc. However, only a few resources are inherently productive. Production activity requires the cooperation and coordination of teams with available resources. The capacity of the firm is the capacity or ability of the team to carry out a certain task or activity with the available resources, say, to carry out a certain investment project. While resources are the source of a firm's capabilities, capabilities are the main source of its competitive advantage (Grant, 1991).

The competitive advantage is influenced by the firm's investment ability, which is defined by the relevant resources. Hofer & Schendel (1978) suggest six main categories of resources: financial resources, physical resources, human resources, technological resources, reputation, and organizational resources.

After we have studied the relevant sources on defining and measuring the investment ability of firms and selected and presented in detail those potential indicators (observed measurement variables) with which we express and measure investment ability as a latent construct in our conceptual model, we now summarize these indicators in Figure 1.

Since capital markets are not efficient, we cannot use traditional financial theory as a theoretical framework for our conceptual model. Therefore, as mentioned, we rely on the theory of resources or the theory of dynamic capabilities and define the variables of investment ability based on that part of this theory which refers to the investment activity of firms and which, both directly and indirectly, provides starting points and guidelines for defining the investment ability of a firm.

Figure 1. Variables (indicators) related to the investment ability of a company



Source: Authors' own work.

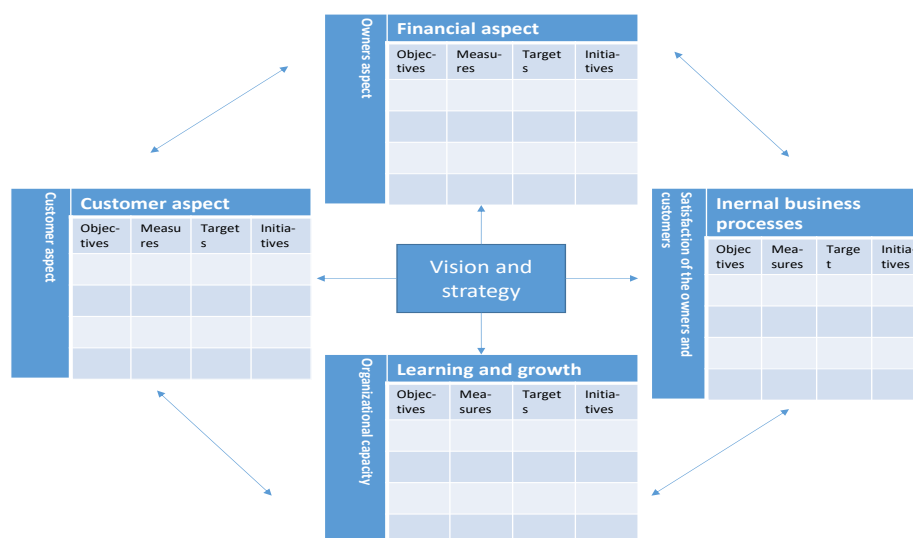
2.1.2. Non-financial performance indicators

At the end of the last century, critics of financially oriented models of performance assessment highlighted the one-sidedness of financial indicators (Johnson & Kaplan, 1987; Schmenner, 1988; Kaplan & Norton, 1992). Financial indicators have become insufficient for judging the performance of firms, in which rapid technological changes, greater innovation and flexibility, and an ever shorter life cycle of their products could be detected. These indicators, which are based on past data, mainly express the consequences of changes in individual areas of business and unfortunately do not allow us to determine the causes that have led to such changes. Firms are thus trying to establish a balanced relationship between the indicators of different areas. Financial indicators derived from financial statements are therefore no longer sufficient for them. The changes that have taken place in dealing with customers have led to the need for a more complete system of showing the real situation in the firm, which finally means that all the elements that are necessary for the normal operation of the business system (the financial aspect as well as dealing with customers, internal processes, growth and learning, i.e., not only financial aspects) should be balanced (Tekavčič, 2000, p. 59).

Therefore, many authors, such as Kaplan (1983) and Eccles (1991), advocated the inclusion of non-financial indicators that originate from the firm's strategy and can eliminate the shortcomings of financial indicators. Non-financial indicators contribute to the explanation of the factors involved in the achieved business performance. Of course, this also applies to the firm's investment activity. Non-financial indicators are indicators used to measure the performance of individual parts of the business process. Since firms are supposed to carry out particularly those activities that contribute to the value of business effects from the point of view of customers, non-financial indicators could reasonably be used to assess business performance. Thus, business performance monitoring systems have been gradually developed which take into account both financial ratios and non-financial indicators in a balanced way, such as the balanced scorecard (BSC) system, which was first designed by Kaplan & Norton (1992).

The balanced statement of operations is a system of monitoring the performance of operations with the help of four aspects of operation, which is shown in Figure 2.

Figure 2. Balanced Scorecard



Adjusted after Kaplan & Norton (1996).

These aspects, namely the financial aspect, the customer aspect, the internal business process aspect, and the learning and growth aspect, include both financial and non-financial indicators. The mentioned aspects are essentially a balanced presentation of external and internal indicators of the firm's business performance. With their help, firms transform their strategic goals into indicators that are used to monitor the success of their strategy. According to Kaplan & Norton (1996, 2008a, 2008b), it is essentially a tool in the process of controlling the implementation of the firm's strategy. This is not a general tool; rather, each firm must design it individually. The balanced statement of operations is relatively widely used, mostly in large firms. This has been reported in many studies (Marr, 2001; Williams, 2001; Rigby, 2001, 2003). Research by Bain & Company (Rigby, 2007) revealed that by 2007, approximately two-thirds of global firms were using this tool. Those firms that use this tool are also said to be more successful than those that do not (Kennerley & Neely, 2003). Neely (2007) notes positive effects of the use of the balanced statement of operations on the performance of operations measured by financial indicators, i.e., net sales revenue and profit before taxes.

Although accounting indicators dominate, the managements of large firms are aware that financial indicators and ratios alone do not allow a comprehensive review of performance and that non-financial indicators are increasingly important in assessing business performance. This can also be seen from the applications of those large and medium-sized firms that have so far participated in the PRSPO (Recognition of the Republic of Slovenia for Business Excellence) project (MIRS, 2013), where in the criteria of the 9th EFQM model, a number of non-financial indicators of business performance are listed. In particular, indicators related to customers, quality indicators, employee indicators, and the firm's concern for the natural environment have high average scores (Rejc, 2002).

According to research from 2008 (Marc, Peljhan, Ponikvar, Šobota & Tekavčič, 2010; Peljhan, Tekavčič, Marc & Šobota, 2010), as many as 70% of firms did not change the way they monitored business performance in the period 2003–2008, with the majority of these firms not using any performance monitoring system. Only 38% of the firms used a balance sheet or some other integrated business performance monitoring system. Based on the results of the research conducted by Pučko & Čater (2008), less than a fifth of Slovenian firms used a balanced scorecard. Today, fourteen years later, we still do not have an up-to-date report on the situation in this area. In general, the concept of a balanced scorecard was developed in accordance with the principles of a firm focused on strategy (strategy-focused organization) into a new closed circle of the managerial system for the successful implementation of the firm's strategy (Kaplan & Norton, 2008b). Firms that followed suit achieved positive results relatively quickly and became committed to sustained performance (Kaplan & Norton, 2008a, 2008b).

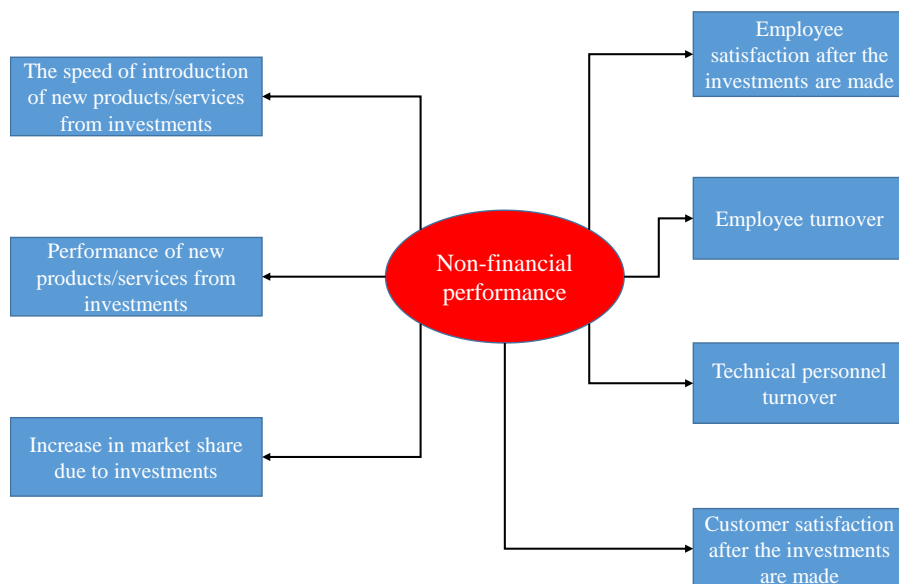
Finally, let's touch on the non-financial indicator of the turnover of employees and technical personnel. The traditional staff turnover theory says that staff turnover has a negative effect on the firm's business performance, efficiency, productivity, sales volume, and profit. Dess & Shaw (2001), Glebbeek & Bax (2004), Kacmar, Andrews, Van Rooy, Steilberg & Cerrone (2006), McElroy, Morrow & Rude (2001), Shaw & Duffy (2005) proved this with their research. Of course, fluctuation can also imply the opposite. A high turnover rate of less successful employees and their replacement with new and more productive personnel who bring new ideas and knowledge to the firm can have a positive effect on business performance. This was proven by Abelson & Baysinger (1984) in their research already in the 1980s. Therefore, it is not so much the number of employees who leave the firm that is important, as the fact that quality personnel remain in the firm, and less quality personnel leave it (Guthrie, 2001).

McElroy and colleagues (2001) claim that personnel turnover mainly has a negative effect on the firm's business performance, but that personnel turnover based on downsizing is much more negatively related to business performance than other forms of turnover. That is why some

researchers who dealt with project competencies in firms (Ekrot, Kock & Gemünden, 2016) also included variables in their models, such as the inherent value of retained human assets, i.e., their competences, which are indispensable for the long-term success of firms. Thus, the construct in their model does not only include the right number of employees, but also the right number of employees with the necessary competencies. On this basis, they proposed the hypothesis that the availability of the necessary project management competencies has a positive relationship with the success of the average project, which they confirmed through an analysis of the collected data. Even before them, other researchers (Geoghegan & Dulewicz, 2008; Turner & Müller, 2005) demonstrated that the abilities of project managers are a central predictor of project success.

After we have studied the relevant sources on measuring the business performance of firms, and selected and presented in detail those potential non-financial indicators (observed measurement variables) with which we express and measure non-financial performance as a latent construct in our conceptual model, we now summarize these non-financial indicators in Figure 3. These are comparative qualitative indicators, which were evaluated by the respondents to our questionnaire. Qualitative evaluations are given with attributes such as bigger, better, or smaller, and are used to express comparison with the competition or the situation before the investment.

Figure 3. Variables (indicators) related to the non-financial performance of firms

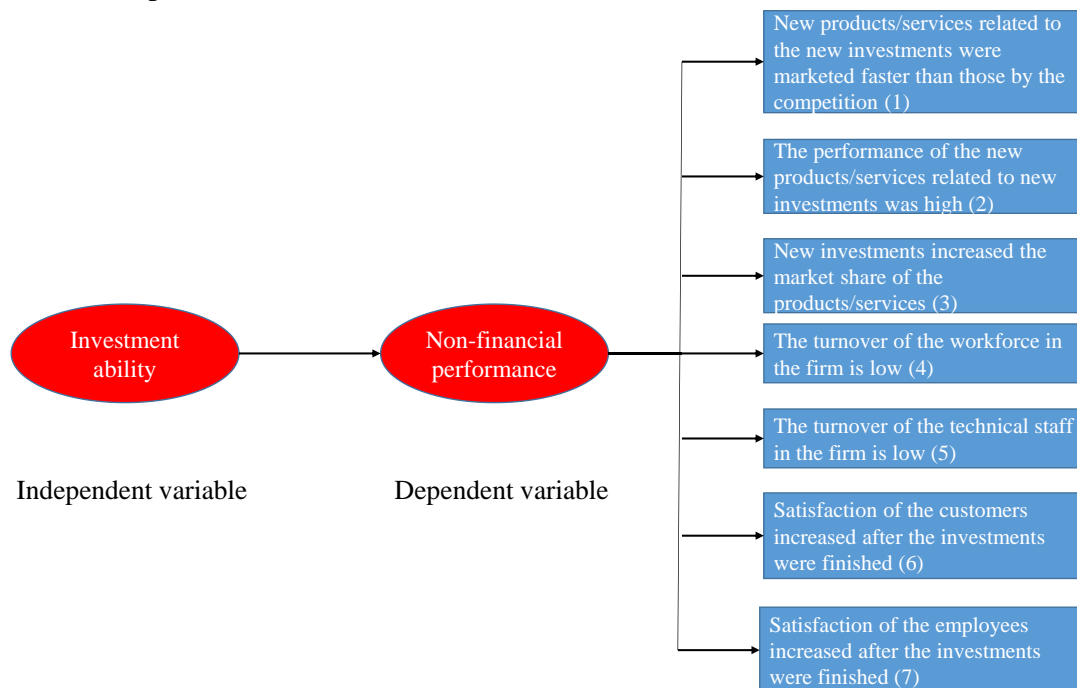


Source: Authors' own work.

2.2. Conceptual and measurement model and research hypotheses

Figure 4 presents the conceptual and measurement model relating to our main research hypothesis that investment ability as an independent variable directly influences non-financial performance as a dependent variable, expressed by some most commonly used non-financial indicators.

Figure 4. Conceptual and measurement model of the impact of investment ability on non-financial business performance



Source: Authors.

The business performance of a firm, defined in our conceptual and measurement model as a dependent variable, can be measured and assessed by a wide range of non-financial indicators.

In the following, we set several hypotheses that deal with the correlation between the individual independent variables that define investment ability and the individual dependent variables – the non-financial indicators of business performance.

3. Research methodology

3.1. Questionnaire design

The questionnaire was designed according to the relevant guidelines (Churchill, 1995; Malhotra, 2007). Respondents chose among pre-defined possible answers. The closed questions design was preferred since it makes the alignment of answers easier and more reliable, hence facilitating statistical analysis.

The questionnaire consisted of two sections. The first section consisted of key questions inquiring about the opinions of respondents (mainly financial managers and CEOs) about the investment activity in their firms. The questions in this section were split in two subsections. The first subsection deals with the investment activity of firms, and the second with their investment ability. As this study is rather comprehensive and complex, investment ability has also been the subject of another paper.³

The second section of the questionnaire gathered general data on the respondents, such as their position in the firm, age, etc., as well as general data on their firms, for example, the firm's year of incorporation, size, average number of employees, technical staff, etc.

³ See the paper "The Impact of Companies' Capabilities on Investment Ability and Performance" (Bole, Bukvič, Prašnikar & Tekavčič, 2020).

The first draft of the questionnaire was pilot tested on a convenience sample of 20 financial managers and CEOs. The final version was designed with minor amendments.

3.2. Data collection and sample

The primary data were collected in the period from January to April 2017 by means of the questionnaire being distributed to 1142 Slovenian large and medium-sized enterprises, sorted from A to J according to the Slovenian Standard Classification of Activities (SKD) 2008, V2. The segmentation into large and medium-sized firms was based on the Slovenian Companies Act (Paragraph 55, ZGD-1-NPB14). In total, 293 questionnaires were completed (of which 91.14% were useable). Thus, we have received 267 valid questionnaires (with a respondent rate of 23.40%). The sample consists of large firms (29.21%) and medium-sized firms (70.79%). Firms from all Slovenian statistical regions (12) were included in the sample. In terms of their legal and organizational status, the majority of the firms in the sample were limited liability companies (74.54 %) and stock companies (21.35 %). Almost 72% of the firms in the sample have existed between 11 and 30 years, which means that the majority of the firms in our sample are mature from the perspective of their life cycle.

The financial data of the firms who sent back the questionnaires were acquired for the period 2010–2017 from the GVIN database, generated from the annual reports of the firms.

3.3. Data analysis

The causal links in our proposed conceptual model have been tested by bivariate analysis. This is a statistical method used to analyze the relationship between two variables. It enables us to draw conclusions from the sample and to generalize them to the entire population. It means that we are able to infer the behavior of the population as a whole based on the results of the sample analysis. This has been carried out by setting up hypotheses, which can be either confirmed or rejected by statistical inference.

By means of the SPSS 25 software platform, we have calculated Pearson's and Spearman's correlation coefficients.

Contingent tables (crosstabs) have also been used to study links between variables or constructs in our conceptual model and thereby test our research hypotheses. Additionally, we wanted to test the links between two nominal variables. Crosstabs are multidimensional frequency distributions, which generally enable one to infer about the link between two variables.

The values of dependent variables Y , which are in our case non-financial performance indicators (7), for example, "new products/services related to the new investments were marketed faster than those by the competition," need to be expressed by the independent variable X , in our case by the individual variable of investment ability, in the form of a linear connection:

$$Y = a + \beta X + \varepsilon \quad (1)$$

Our research sample can be written as:

$$y = \hat{a} + \hat{\beta}x \quad (2)$$

The regression line is a line with the equation $y = \bar{a} + \bar{\beta}x$, which best fits the data in the plane $(x_1, y_1), (x_2, y_2), \dots, (x_n, y_n)$ (determined by the least squares method) and serves as a mathematical model used to estimate the expected value of the variable Y by a given value of the variable X .

The validity of the linear model can be tested by a variance analysis based on size by the model of explained variance for an alternative hypothesis:

$$H_1 : R^2 \neq 0 \text{ (the linear model is appropriate)}$$

The reliability of the calculated parameters of the regression line can be tested by means of the t-test:

$$H_1 : \beta \neq 0 \text{ (} a \neq 0 \text{)}.$$

Let us also state that explanatory variables in the context of regression are sometimes referred to as endogenous. Thus, ordinary least squares (OLS) can produce biased and inconsistent estimates. In our statistical analysis, we have not included any instrumental variables to avoid biased estimates, which can be considered one of the limitations of our research.

4. Empirical results – Testing the hypotheses on the impact of investment ability on non-financial performance

At the beginning of this section, we should mention that the authors of the extensive research (Bole et al., 2020), using the SEM model (linear structural equation modelling), studied the impact of individual factors, such as financial flexibility, technological capabilities, organizational management capabilities, and project management capabilities, on investment ability and at the same time the impact of investment ability on financial and non-financial performance. Among other things, with the help of the SEM model, we have found that the impact of the firm's investment ability on its business performance, expressed by financial ratios, is positive, but hardly significant (standardized coefficient 0.130; $p < 0.063$).

It is completely different when it comes to the impact of a firm's investment ability on business performance in the light of non-financial indicators. The impact of a firm's investment ability on its business performance expressed by non-financial indicators shows that the standardized coefficient is 0.661. This indicates a positive, very good, and, according to Hair, Anderson, Tatham & Black (1998), statistically significant impact ($p < 0,000$). Based on these findings, this hypothesis (labeled in our study as H5.2) can be fully confirmed, which means that the investment ability of the firm affects the non-financial performance of the firm, and that this influence is significant. The impact of all other factors on the firm's non-financial performance is only one-third of the total.

Within the framework of hypothesis H5.2, we checked the relationship between several individual variables that define investment ability and individual variables that are used to measure the non-financial performance of firms. A correlation has been found for the following pairs of variables:

H5.2-1 Top and middle management knows how to make decisions and then, based on these decisions, take appropriate action to achieve the desired goals. Vs. The performance of new products/services related to new investments was high.

H5.2-2 Top and middle management is able to decide, accept decisions, and then, based on these decisions, take appropriate action to achieve the desired goals. Vs. Through investments, we increased the market share of our products/services.

H5.2-3 Top and middle management is able to achieve the planned goals. Vs. We introduced new products/services related to new investments faster than the competition.

H5.2-4 Top and middle management is able to achieve the planned goals. Vs. With investments, we increased the market share of our products/services.

H5.2-5 Top and middle management knows how to combine and transform resources. Vs. The performance of new products/services, which are related to new investments, was high.

H5.2-6 Top and middle management knows how to transform the organizational structure in accordance with changes in the environment. Vs. The satisfaction of the company's employees has increased after the investments were made.

All the above hypotheses are tested using t-statistics, with the t-test of the difference between means for dependent samples (paired samples t-test) in SPSS 25. Let's look at this in detail using the example of testing hypothesis H5.2-2.

Hypothesis H5.2-2:

We want to test hypothesis H5.2-2. The average value of the variable x1 is the same as the average value of the variable x2 ($\mu_{x1} = \mu_{x2}$). On a 7-point Likert scale, the average assessment that top and middle management can make decisions and act accordingly to achieve the desired goals (variable x1) is the same as the average assessment that the success of new products/services related to the new investments was high (variable x2). In other words, the determination of the management, i.e., the fact that the management in the firm knows what it wants, that it chooses the right business and investment decisions, that it takes the appropriate measures for their implementation, and that it constantly watches over their realization, has a significant impact on the fact that the products/services deriving from the new investments are very successful.

Let's write the statistical hypotheses, null (H_0) and alternative (H_1), as follows:

$$H_0 : \mu_{x_1} = \mu_{x_2}$$

$$H_1 : \mu_{x_1} \neq \mu_{x_2} \text{ ali } \mu_{x_1} < \mu_{x_2} \text{ ali } \mu_{x_1} > \mu_{x_2}$$

Assumptions:

- variables x1 and x2 are measured on an interval or ratio level (7-point scale),
- normally distributed data is characteristic of both variables,
- the samples of the groups are dependent, the data are "in pairs."

We want to test the hypothesis $H_0: \mu_{x1} - \mu_{x2} = \delta$ on a sample of size n, or the hypothesis $H_0: \mu_{x1} = \mu_{x2}$ ($\delta = 0$).

Test stats:

$$T = \frac{\bar{X}_D - \delta}{\frac{S_D}{\sqrt{n}}} \sim T(sp = n - 1),$$

where X_D is the mean value of the difference and S_D is the standard deviation of the difference between the two variables ($X_D = X_1 - X_2$).

We perform this test in the SPSS 25 software tool and obtain the following results.

Testing hypothesis H5.2-2 by t-statistics

Paired Samples Statistics

	Statistic	Bias	Bootstrap ^a			
			Std. Error	BCa 95% Confidence Interval		
				Lower	Upper	
N-Top and middle management is able to decide, accept decisions and then, based on them take appropriate action to achieve the desired goals	Mean	5.94	0.00	0.07	5.79	6.08
	N	246				
	Std. Deviation	1.116	-0.005	0.073	0.977	1.243
	Std. Error Mean	0.071				
N-Z Through investments we increased the market share of our products/services	Mean	5.74	0.00	0.07	5.59	5.88
	N	246				
	Std. Deviation	1.131	-0.004	0.065	1.009	1.247
	Std. Error Mean	0.072				

Note: a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Paired Samples Correlations

	N	Correlation	Sig.	Bootstrap for Correlation ^a			
				Bias	Std. Error	BCa 95% Confidence Interval	
					Lower	Upper	
N-Top and middle management is able to decide, accept decisions, and then, based on these decisions, take appropriate action to achieve the desired goals & N-Z Through investments, we increased the market share of our products/services	246	0.480	0.000	0.002	0.064	0.357	0.600

Note: a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

It shows, among other things, the Pearson correlation coefficient between two variables. SPSS 25 displays the value of Pearson's r and the statistical characteristic (2-tailed significance value). For these data, the experimental conditions yield a relatively high correlation coefficient, $r = 0.480$, which is significant at $p = 0.000$ and has a bootstrap confidence interval that does not include zero (0), BCa 95% CI [.059 and .347]. The calculation shows whether the difference between the averages of two conditions is large enough that it is not a random result. The calculation shows the difference of the average value between the two average results of each of the conditions: $5.94 - 5.74 = 0.20$ (this value is $\bar{X}-D$ in the above equation). Also shown is the standard deviation of the differences between the two means, and more importantly, the standard error of the differences between the scores (ratings) of the respondents in each condition. The t -statistic is calculated by dividing the mean of the differences by the standard error of the differences ($t = 0.20/0.073 = 2.781$).

The size t is compared with known values based on the degrees of freedom. For the same respondents, the degrees of freedom are equal to the sample size minus 1 ($df = N - 1 = 246$). SPSS 25 uses the degrees of freedom to calculate the exact probability that the t value is as large as the one obtained if there were no difference between the population means. This probability is read in the column marked Sig. SPSS 25 displays the 2-tailed probability, which is the probability if no direction of group differences were predicted. Its use is also recommended by Field (2013). The 2-tailed probability for these variables is very low ($p = 0.006$); it tells us that there is a 0.0% probability that a value of t at least this large would occur if the null hypothesis were true. We are interested in whether this value is less than or greater than 0.05. Since p is less than 0.05, we can conclude that there is a significant difference between the mean values of these two samples. With

this, we rejected the null hypothesis H_0 and accepted the alternative hypothesis H_1 . In the given case, we can claim that when top and middle management knows how to make decisions and then take appropriate action based on them to achieve the desired goals, this has a significant impact on the increase of market share of the products/services related to new investments.

Paired Samples Test

	Paired Differences				Paired Differences	t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower Upper	95% Confidence Interval of the Difference Lower Upper			
N-Top and middle management is able to decide, accept decisions, and then, based on these decisions, take appropriate action to achieve the desired goals & N-Z Through investments, we increased the market share of our products/services	0.203	1.146	0.073	0.059 0.347	0.347 0.059	2.781	245	0.006

Similarly, in the following, we perform a t-test for the other hypotheses set out above, which deal with the impact of investment ability on the non-financial performance of firms.

The results and the corresponding conclusions, whether we confirm or reject the null hypothesis and accept the alternative, are given in Table 1.

Table 1. The results of the hypotheses testing

Relationship (path)	Direction	Coefficient ^a	Result
H5.1: Investment ability → Business performance (financial aspect) ^b	+	0.133**	Hypothesis confirmed
H5.2: Investment ability → Business performance (non-financial aspect) ^c	+	0.661**	Hypothesis confirmed
H5.2-1: Management's ability to make decisions and take action → Performance of new products/services related to new investments	+	0.502 (p < 0.000)	Hypothesis confirmed
H5.2-2: Management's ability to make decisions and take action → Increasing the market share of products/services related to new investments	+	0.480 (p < 0.006)	Hypothesis confirmed
H5.2-3: Ability to achieve planned goals → Faster introduction of new products/services related to new investments than competitors	+	0.397 (p < 0.000)	Hypothesis confirmed
H5.2-4: Ability to achieve planned goals → Increasing the market share of products/services related to new investments	+	0.478 (p < 0.000)	Hypothesis confirmed
H5.2-5: Ability to combine and transform resources → Performance of new products/services related to new investments	+	0.459 (p < 0.004)	Hypothesis confirmed
H5.2-6: Ability to transform the organizational structure → Employee satisfaction after the implementation of the investment	+	0.571 (p < 0.021)	Hypothesis confirmed

Note: ^a Standardized path coefficient**p < 0.05.; ^{b, c} See Bole et al., 2020.

Source: Printout of results from the SPSS 24 program.

On the basis of the hypotheses set out above and tested with t-statistics, we can conclude that the investment ability of firms, defined by those dynamic capabilities that refer to the investment activity of firms, has a statistically significant effect on the performance of business operations expressed by non-financial indicators. Between these two selected constructs in the conceptual model, there is a medium strong correlation between [0.3] and [0.6]. Correlations between the other variables of these two constructs were not statistically significant.

5. Conclusion, limitation, and future directions

This study is based on the micro theory of investment, resource-based theory, the theory of dynamic capabilities, and theoretical approaches to measuring firms' non-financial performance. It relies on a simple conceptual measurement model consisting of only two constructs, investment ability on one side and non-financial performance on the other. By means of this model, we have tried to find out and assess how much investment ability improves the business performance of firms, expressed and measured by the relevant non-financial indicators.

If firms are to create and maintain a permanent competitive advantage, they must constantly invest in the development of new products/services, in conquering new markets, in expanding their production/service capabilities, in updating technology, in acquiring knowledge and upgrading the skills of their employees, in protecting the environment, and always be aware of their social responsibility. To invest means to be able to invest. Investment ability is a term that is increasingly used both in theory and practice, although so far researchers have not dealt much with it in the etymological sense, nor have there been any serious attempts in the research field to more clearly define investment ability (expressed with one or more relevant indicators, assessed, and measured), let alone attempts to assess and measure the impact of investment ability on business performance.

Thus, the performance of a firm's operations also strongly depends on its investment ability, which means how successful the firm is in discovering investment opportunities, planning its investments, implementing the investment projects, and achieving the desired economic effects of such investments.

We set the research problem based on the following facts. First, there are no comprehensive research and other approaches that would cover a wide range of resources and capabilities pertaining to investment ability and through it research their impact on business performance. Second, we note that there is little empirical evidence with the help of which we could draw conclusions about the impact of investment ability on the performance of firms. Third, we have not seen a comprehensive study of the sources of investment ability and their effects on business performance. Fourth, the present study can be a good starting point for further research in this field, which is still completely unexplored.

There is a gap in the existing literature, which we have filled with our research, which takes a comprehensive approach to the study of the relationship between investment ability and the business performance of firms. In this paper, we are focusing on non-financial performance only. The objectives were: first, to determine the variables that define a firm's investment ability, second, to choose the relevant non-financial indicators to measure business performance after the investments were implemented, and third, to create a conceptual measurement model to find out how investment ability influences non-financial business performance.

The results of our research carried out on big and medium-sized Slovenian enterprises for the period 2010–2017 fully support our hypotheses as proposed in the introduction. Investment ability positively influences the business performance of firms expressed by non-financial indicators. Statistically significant (Sig., $p < .000$), there exists a strong correlation between investment ability and non-financial performance ($R = 0.661$).

Within the framework of this hypothesis (labeled H5.2), we checked the relations between several individual variables that define investment ability and individual variables used to measure the non-financial performance of firms. We found a strong correlation for quite a few pairs of variables. The management's ability to make the right investment decisions and act accordingly is demonstrated by the high performance of new products/services generated by new investments (H5.2-1). The management's ability to make the right investment decisions and take appropriate action is reflected in the increase in the market share of products/services (H5.2-2). The management's ability to achieve the planned goals is reflected in the faster introduction of new products/services resulting from new investments than in the case of the competition (H5.2-3). The management's ability to achieve the planned goals is shown by the increase in the market share of products/services (H5.2-4). The management's ability to combine and transform resources is demonstrated by the high performance of new products/services generated by new investments (H5.2-5). The management's ability to transform the organizational structure in accordance with changes in the environment can be seen in the increase in the satisfaction of the firm's employees after the investments are made (H5.2-6).

We are aware of the limitations of the present study, in terms of the relatively small sample size and firm size and the endogeneity of the variables included in our linear model. Our sample includes a relatively high number of large and medium-sized firms. If the survey had been conducted internationally, it would have included a greater number of large firms, where the impact of strategic investments is more pronounced. Endogeneity refers to situations in which an explanatory variable is correlated with the error term. By using an instrumental variable in a linear model, more consistent estimates may be obtained.

In the future, we also plan to introduce certain methodological improvements to the questionnaire, which will include a number of other determinants from sources found in the field of investment activity, and performance indicators, including non-financial ones. The relevant literature furthermore led us to consider the directions of causality in the model. Since our research is based on a cross-sectional database, we cannot prove causation but can only confirm the assumed paths. The direction of causality could be determined only by a longitudinal study, which represents an important opportunity for further research.

Although we have chosen two observed variables within the framework of investment ability, which include the firm's development strategy in the sense of its knowledge and elaboration by the firm's management, it would be opportune to upgrade the model by checking the importance and the way the firm's strategic orientation influences investments. In this way, it would be possible to explicitly determine to what extent the implemented investments are coordinated with the development strategies of the firms.

It would also make sense to extend the research to small firms, or to determine the impact of various sources on their investment ability and then the impact of investment ability on their performance.

Last but not least, we can point out the need for further research, which would also cover firms in other countries, as this could lead to international comparisons. We could compare several samples in different business environments with different cultures.

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METHODOLOGY FOR THE PLANT STRESS DETECTION USING REMOTE SENSING METHODS ON RGB SENSOR IMAGE

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Abstract

In recent decades, we have witnessed an increase in the human population and, therefore, a greater need for food production. Given that arable land is limited, the application of more efficient methods of growing plants and realizing the maximum potential is one of the biggest challenges facing agriculture and, therefore, the human population. In order to obtain the most efficient yield, it is necessary to constantly monitor large areas and protect them from plant stress, which manifests itself as any unfavorable condition or substance that affects or blocks a plant's metabolism, growth, or development. In the process of preserving the health of plants in the field, a lot of effort needs to be put in to solve the various challenges faced by farmers in terms of visiting large arable areas and the inaccessibility of certain parts of the field due to the culture being grown. With the development of remote sensing methods, it is possible to efficiently collect information from the field without physical contact, which gives the opportunity to apply various statistical methods to the obtained data. This paper presents a methodology for plant stress detection in the field using the image obtained by remote sensing methods. The presented methodology is based on the extraction of vegetation indices (VI) from the image samples which represents a healthy plant and VI histogram calculation. In the processing phase, histogram of a healthy plant is then compared with the histogram of each field region of interest and the percentage of overlap is calculated. By applying Hierarchical Cluster Analysis (HCA) on one variable using Ward's method, all region of interest are classified into a certain cluster based on their percentage of overlap with the healthy plant histogram. The proposed methodology was tested on two fields with different crops, so stress detection was effectively performed on corn and wheat fields.

Keywords: agriculture, remote sensing, stress detection, precision agriculture

NOMINAL CONVERGENCE IN EUROPEAN COUNTRIES WITH SPECIAL FOCUS ON WESTERN BALKAN COUNTRIES

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Abstract

The concept of price stability is widely accepted precondition for optimal economic development and implies nominal convergence in rates of inflation. Therefore, inflation dynamics is recognized as key nominal convergence indicator and serves as a benchmark for optimal stabilization programs creation and harmonization of political and economic goals with the aim of reducing suboptimal policies. In this study, we assess convergence properties of inflation rates among 24 European economies including a group of Western Balkan countries using monthly data over the period 2008-2019. Convergence performance is of great importance for Western Balkan countries, which lag significantly behind their European neighbours but indisputably aim to integrate in EU. We employ panel unit root testing procedure to estimate whether and when convergence hypothesis holds having in mind pronounced heterogeneity within the group due country specific cultural legacy and economic outcomes. The results of analysis suggest convergence patterns in inflation rate differentials towards euro area inflation and regional group average. Our results remain consistent across country grouping and over time for different sub periods. This part of research thus answers an important policy question regarding EU integration process indicating macroeconomic interdependence among countries and points to role of macroeconomic policy conduct, economic mechanisms, and forces that affect both, nominal and real convergence process.

Key words: convergence, euro area inflation, Western Balkan, panel unit root tests

FACTORS AFFECTING THE LOW LEVEL OF THE SHARE OF DIRECT TAXES IN TOTAL PUBLIC REVENUES IN THE FEDERATION OF BOSNIA AND HERZEGOVINA

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Direct taxes are part of a country's tax system. The subject of the research is related to the presentation and analysis of the direct taxation system in the Federation of BiH. Considering the main research problem, analysis, and pointing out the inefficiency of the direct taxation system in the Federation of BiH, the aim of the paper was to present the main causes of unsatisfactory level of participation of direct taxes in total tax and public revenues. In accordance with the research problem and the main goal, quantitative and qualitative methods were used, primary as well as secondary sources of information were collected. The research showed that the system of direct taxation in the Federation of BiH is inefficient and insufficiently efficient, and that the share of direct taxes in total public revenues depends on high gray economy rates, insufficiently developed public awareness of the need to pay taxes, and vagueness and ambiguity of legislation. clearly show that it is necessary to take measures to ensure better reporting and collection of direct taxes, which ultimately leads to better filling of the state budget, which is one of the prerequisites for economic development and economic development, as well as for the development of the country as a whole.

Key words: direct taxes, efficiency, gray economy, workload

INTRODUCTION

The structure of the country, its division into two entities and districts, as well as the division of jurisdiction between the state, entities and districts, led to the fact that tax regulations are adopted at all decision-making levels. Regulations related to direct taxes are adopted at the entity level. Direct taxes in the Federation of BiH are collected by the Tax Administration, which is part of the Federal Ministry of Finance. Types of direct taxes are profit tax, income tax and property tax. The share of direct taxes in total public revenues in the Federation of Bosnia and Herzegovina is very low and at an unsatisfactory level, due to inefficient collection thereof. There are many factors that influence the ineffective collection of direct taxes, the most significant of which are: a high rate of the gray economy, an unsatisfactory legal framework, as well as an underdeveloped awareness of the necessity of paying taxes. Excessive work load is one of the most significant factors affecting the high level of gray economy, which is one of the key issues in order to improve the system of direct taxation in the Federation of BiH and it is necessary to take all possible measures to reduce the total work load. A comparison of direct taxes in the Federation of BiH with direct taxes in developed countries points to the fact that the competitive advantage of a low rate of direct taxes in order to attract investments is reduced by an excessive tax burden on labor. Given that tax collection is the easiest way to collect funds for financing the state's public expenditures, it is necessary to find ways to collect them in the largest possible amount, in order to enable better and more efficient functioning of the entire society.

1. DIRECT TAXES IN THE FEDERATION OF BIH

1.1. Basic features of the direct taxation system in the Federation of Bosnia and Herzegovina

The system of direct taxation in BiH is under the jurisdiction of the entities and Brčko District. According to the Constitution of the Federation of Bosnia and Herzegovina, the Federation and the cantons have jurisdiction over direct taxes. The system of revenue distribution between them is regulated by the Law on the Allocation of Public Revenues in the Federation of Bosnia and Herzegovina. The Federation of Bosnia and Herzegovina adopts and prescribes laws in the field of taxation: games of chance, profits of legal entities, income, contributions for social security, contributions to chambers, forests, water and tourist fees, while taxation of real estate turnover, inheritance, communal fees and property is governed by cantonal regulations. (Isović, 2016, 2)

Direct taxes at the level of the Federation of Bosnia and Herzegovina are collected by the Tax Administration of the Federation, based on the Law on Tax Administration of the Federation of Bosnia and Herzegovina. The Law on Tax Administration of the Federation of BiH regulates the basis for the application of all tax laws, the Law on the Unified System of Registration, Control and Collection of Contributions, the Law on Fiscal Systems and the Law on Contributions in the Federation of BiH and related by-laws, and defines certain misdemeanors in the field of taxation. and sanctions for those acts. This law refers to the implementation and execution of activities in the field of all types of federal, cantonal, city and municipal taxes and contributions, fees, special fees, tourist board membership fees, trade chamber membership fees and fines for tax violations.

1.1.1. Tax Administration of the Federation of Bosnia and Herzegovina

The Tax Administration of the Federation of BiH is an administration within the Federal Ministry of Finance. This organization of the Tax Administration has existed since 2002, when the Law on the Tax Administration of the Federation of Bosnia and Herzegovina was adopted. The tax administration of the Federation of Bosnia and Herzegovina is organized on two levels, namely at the level of the Central Office with headquarters in Sarajevo and at the level of ten (10) cantonal tax offices with associated tax offices (73 offices).⁴

In addition to the calculation, control and collection of public revenues, the Tax Administration of the Federation of Bosnia and Herzegovina also performs other administrative and professional tasks, such as registration of taxpayers, receipt, control and processing of tax returns, inspection supervision, forced collection of tax liabilities, giving opinions on tax issues. and conducting taxpayer education. Reforms in the system of direct taxes such as the adoption of the Law on Profit Tax and the Law on Income Tax, the introduction of the Law on Fiscal Systems and the Law on the Unified System of Registration, Control and Collection of Contributions gave great importance to the modernization and progress of the tax system of the Federation of BiH, but certain changes are still ahead in order for the Tax Administration of the Federation of Bosnia and Herzegovina to develop in accordance with the best European practice and to fulfill its tasks in the best possible way. The Tax Administration of the Federation of Bosnia and Herzegovina is obliged to ensure the effective realization of the rights and interests of taxpayers within the prescribed deadlines, which includes good organization in the segment of execution of tasks within its jurisdiction. For employees of the Tax Administration of the Federation of BiH, the principle of legality is the basic and most important principle, which they are obliged to adhere to

⁴ Taken from <http://www.pufbih.ba>.

in their work. All employees are obliged to ensure compliance with the Constitution of BiH, the Constitution of the Federation of BiH, laws and other regulations of the State of BiH and the Federation of BiH.⁵

The Tax Administration is responsible for the implementation and execution of activities in the field of all types of federal, cantonal, city and municipal taxes and contributions, fees, special fees, tourist board membership fees, trade chamber membership fees and fines for tax violations. The internal organization of the Tax Administration, the types of organizational units, their jurisdiction, the systematization of jobs with a description of jobs grouped by type, degree of complexity, responsibility and other conditions for their execution is determined by the Rulebook on the Internal Organization of the Tax Administration, which has been in force since June 2013.

According to the Strategic Plan of the Tax Administration of the Federation of Bosnia and Herzegovina (2019 – 2022), the mission, vision and core values are defined. The values of the Tax Administration are the principles on which current and future activities are based, and which are continuously implemented by all employees, and the most important tasks of the Tax Administration of the Federation of BiH are:⁶

- registration and identification of taxpayers,
- registration of contributory payers and insured persons,
- receipt and processing of tax returns and reports, breakdown of tax obligations, collection and refund of taxes,
- collection of tax debt by regular and forced means,
- determining the timeliness, legality and accuracy of submitted tax returns,
- carrying out inspection supervision,
- conducting tax investigations,
- issuance of tax opinions,
- cooperation with tax and other authorities and other tasks in accordance with the law.

For the period 2019-2022. year, the Tax Administration of the Federation of Bosnia and Herzegovina has identified 7 key strategic priorities:⁷

- Fair, rational and efficient collection of public revenues through proper application of tax laws and development of the concept of voluntary declaration and payment of tax obligations
- Reduction of tax evasion, fight against gray economy and increase of tax discipline
- Establishing an accurate register of taxpayers and tax bookkeeping
- Strengthening the reputation and trust of taxpayers in the institution of the Tax Administration
- Improvement, development and maintenance of the information system of the Tax Administration in accordance with new business processes and changes
- Continuous development and management of the quality of service provision to taxpayers
- Reorganization of the activities of organizational units, processes and work procedures of the Tax Administration of the Federation of Bosnia and Herzegovina and employment of professional and educated personnel who will support the modernization of the Tax Administration.

⁵ Ibid

⁶Strategic plan of the Tax Administration of the Federation of Bosnia and Herzegovina (2019 – 2022), p.3.

⁷ Ibid, str.8.

The achievement of basic strategic goals is conditioned by various factors, such as: the complexity and complexity of the BiH tax system; the complexity of legal regulations, as well as their inconsistency and frequent changes; division of tax laws and executive bodies at multiple levels; the institutional basis of taxation, that is, the division of fiscal and tax authorities, which implies an overemphasized degree of decentralization of the tax authority; frequent changes in legal regulations; lack of financial resources due to the limited budget capacities of the Federation of Bosnia and Herzegovina, weak economic development and pronounced unemployment; education of existing employees and recruitment of new ones; modernization of the information system.

With the aim of more efficient, effective and high-quality work, recently, the work of the Tax Administration of the Federation of BiH has been directed towards strengthening tax awareness and discipline of taxpayers, increasing the collection of public revenues, positive reforms in all business processes, launching initiatives to regulate the status of the Tax Administration and regulations from its jurisdiction, education of all employees and raising the reputation and expertise of the institution.⁸

1.2. Profit tax in the Federation of Bosnia and Herzegovina

Profit tax in the Federation of Bosnia and Herzegovina is collected by the Tax Administration of the Federation, based on the Law on Profit Tax of the Federation of Bosnia and Herzegovina, and the Rulebook on the Application of the Law on Profit Tax. In the period from January 1998 to the end of 2007, the Law on Profit Tax was in force in the Federation of Bosnia and Herzegovina, when it was replaced by the Law on Corporate Profit Tax, which entered into force on January 1, 2008. This law replaced the Law on Profit Tax, which entered into force on January 1, 2016, and is still in force today. The aforementioned laws were followed by the Rulebook on the Application of the Law on Profit Tax, which underwent several changes.

The currently valid law relies to a significant extent on the laws that preceded it. The basic common feature of all the aforementioned laws refers to the method of determining the tax base, which corresponds to the accounting profit adjusted for unrecognized, i.e. deductible, items. Essentially, the subsequent laws followed changes in accounting regulations that went in the direction of incorporating International Accounting Standards (IAS) and International Financial Reporting Standards (IFRS) into domestic legislation. The most significant difference in the aforementioned laws is that the law, which was in force from 1998 to 2007, was characterized by a profit tax rate of 30% applied to the base, while the later law reduced it to 10%, and that rate applies and today.

In accordance with the Law on the Allocation of Public Revenues in the Federation of Bosnia and Herzegovina, payment of profit tax by banks and other financial organizations, insurance and reinsurance companies for persons and property, legal entities from the field of electricity, post and telecommunications, legal entities from the field of games of chance is made in favor of the Budget of the Federation of BiH, while other legal entities make the payment in favor of the cantonal budgets, according to their headquarters. Cantons can distribute part of the total income collected on the basis of profit tax to the municipalities/cities in their composition, in accordance with the cantonal regulations in the area of belonging and distribution of public revenues.⁹

⁸ Ibid, str.4.

⁹Annual consolidated review of realized public revenues for 2019, p.10.

The currently valid law defines: corporate tax payer, methodology for determining the tax base, payment and collection of corporate tax, elimination of double taxation, group taxation, taxation in case of status changes, tax incentives, transfer prices, penal provisions for violations related to violations provisions of this law as well as other matters of importance for determining the profit tax payable in the Federation of Bosnia and Herzegovina according to this law. Further, according to the same law: The corporate tax payer is a business company and other legal entity resident in the Federation that performs economic activity independently and permanently by selling products and/or providing services on the market in the Federation, Republika Srpska, Brčko District of BiH or on the foreign market for the purpose of get. A subsidiary of a legal entity from the Republika Srpska and Brčko District, which is registered on the territory of the Federation, is also liable for profit tax for the profit it makes by doing business in the Federation. A corporate entity of a non-resident legal entity that operates through a permanent place of business on the territory of the Federation and is a resident of the Federation is also liable for corporate income tax. The taxpayer is also a non-resident on the basis of realized income from a resident of the Federation.

Furthermore, the same law prescribes: The tax base is determined in the tax balance by harmonizing expenses and income and capital gains/losses shown in financial statements in the manner prescribed by this law.

The current law also provides for tax benefits, which can be divided into reductions in the base, reductions in tax liability and exemptions from tax liability. The profit tax rate in the Federation of Bosnia and Herzegovina is 10%. Compared to neighboring countries as well as EU countries, that rate is very low and is among the lowest prescribed rates. Such a low rate of profit tax should lead to significant tax competitiveness of our country in order to attract domestic direct investments. To that end, tax benefits are also very important, which are a very important factor of competitiveness.

1.3. Income tax in the Federation of Bosnia and Herzegovina

Income tax in the Federation of BiH is collected by the Tax Administration of the Federation, based on the Law on Income Tax of the Federation of BiH, and the Rulebook on the Application of the Law on Income Tax.

Until 2009, the system of taxation of citizens' income was divided between the Federation and the cantons in terms of jurisdiction. The federal level of government prescribed a tax on (net) salary, and the cantons prescribed a tax on the total income of citizens, a property tax, as well as taxes on income from property and property rights, a tax on real estate transactions, a tax on income from copyrights, and a gift tax and heritage and other. The basis for calculating the tax on the total income of citizens was determined every year by the competent canton, with the fact that some cantons did not even introduce this tax form into their tax system (for example, Central Bosnia and West Herzegovina cantons). Starting in 2009, the tabular system of income taxation was replaced by a synthetic system of income taxation with a single rate of 10% (for incomes over 3,600 BAM per year). (Lazović-Pita, Pita, 2012, 108)

The Law on Income Tax was adopted in 2008, and has been in force since January 1, 2009, and since then it has undergone several changes, which were followed by changes to the Rulebook on the Application of the Law on Income Tax. Tax is calculated and paid at the time of salary

payment, and a tax return is submitted at the end of the year. If a person has paid more tax during the year than is shown in the tax return, he is entitled to a refund.

The Law on Income Tax prescribes the taxation of income from non-independent and self-employed activities, income from property and property rights, capital investment and winnings achieved by participating in prize games and games of chance, while the allocation of income collected on this basis is regulated by the Law on Allocation of Public Revenues in the Federation of Bosnia and Herzegovina. In accordance with the above, of the total collected income based on income tax, a minimum of 34.46% belongs to the municipalities/cities, i.e. 1.79% to the municipalities in Sarajevo Canton, and the cantons, in accordance with their regulations in the area of belonging and distribution of public revenues, can distribute an amount greater than the minimum prescribed to the municipalities/cities in its composition.¹⁰

The currently valid law prescribes the method of determining and paying personal income tax in the Federation of Bosnia and Herzegovina. An income tax payer is a resident of the Federation and a non-resident who earns income, namely: 1) a resident who earns income in the territory of the Federation and outside the territory of the Federation, 2) a non-resident who performs an independent activity through a permanent place of business in the Federation, 3) a non-resident who performs a non-independent activity activity on the territory of the Federation, 4) a non-resident who earns income on the territory of the Federation from movable and immovable property, copyrights, patents, licenses, capital investment, or any other activity that results in income that is taxable according to this Law. Furthermore, income tax is taxed on the income that the taxpayer receives from: 1) non-self-employed activities, 2) independent activities, 3) property and property rights, 4) capital investments, 5) participation in prize games and games of chance.

This law also defines: natural persons who are not subject to taxation, income that is not considered income, as well as income on which income tax is not paid. The prescribed rate of income tax is 10%. This rate is one of the lowest income tax rates in the surrounding countries and the EU, and together with the mentioned benefits, could significantly contribute to tax competitiveness in the area of employment and investments. However, given that other levies related to employment, such as mandatory contributions, are very high, they make the work load in the Federation of BiH extremely high, which ultimately significantly reduces competitiveness. Namely, the total workload in our country is among the highest in Europe, although the average salary of our workers is significantly lower and amounts to 1/3 of the average salary in other European countries. (Kumalić, 2019, 3) Prescribed salary contributions amount to 41.5% , which is a very high percentage and makes work significantly more expensive, and ultimately the total tax burden on the net salary amounts to 70.74%.

In order to increase investments and employment, and improve the competitiveness of our economic entities, the ruling structure is trying to reduce the total tax burden on labor by proposing a new Law on Income Tax and Law on Contributions, which should be adopted as a package. The proposal is to reduce the prescribed contribution rates, and at the same time to increase the income tax rate to 13%, on net salaries above 800 KM. Also, it is proposed to tax hitherto non-taxable benefits such as hot meals, transport and holiday pay, as well as taxation of work contracts with full contribution rates. Many discussions have been and are still being held on the subject of these proposals, and the general view is that ultimately there will be no reduction in the workload, but rather the burden will shift from contributions to income tax. The aforementioned laws have not yet been adopted.

¹⁰ Annual consolidated review of realized public revenues for 2019., p.11.

1.4. Property tax in the Federation of Bosnia and Herzegovina

The collection of income related to property taxation, which includes: property tax, inheritance and gift tax, and real estate transaction tax, in the Federation of Bosnia and Herzegovina is currently regulated by cantonal laws and regulations of local self-government units. The payment of the above is made in favor of the public revenue account of the canton, while part of the total collected amount is directed to the municipal/city budgets, in accordance with the ratios prescribed by each canton. Each canton has its own laws on the basis of which revenues from these taxes are collected.

Therefore, as already mentioned, legal legislation based on property tax is passed at the level of each canton. It is noticeable that all the adopted laws dealing with this issue have very similar characteristics. Taking into account the defined provisions of the cantonal laws that regulate this area, it is noticeable that all income from property taxes is the income of the municipalities and cities in whose territory they are generated. It is also noticeable that property tax rates on the territory of the Federation of Bosnia and Herzegovina are not uniform, and differ from canton to canton. The real estate transaction tax rate is generally 5% in all cantons. Inheritance tax rates range from 2% to 8%, while gift tax rates range from 3% to 10% of the base.

2. FACTORS AFFECTING THE EFFICIENCY OF COLLECTION OF DIRECT TAXES

The process of collecting direct taxes in the Federation of Bosnia and Herzegovina is quite difficult, and it is not efficient and effective enough. Many legal entities and individuals try to pay as little tax as possible or avoid paying it at all. Therefore, in our society there is a general tendency to avoid paying taxes, which makes the process of collection and collection of direct taxes inefficient. There are several factors that affect the efficiency of collection and collection of direct taxes in the Federation of Bosnia and Herzegovina, and the most significant and prevalent among them are: high rate of gray economy, underdeveloped tax awareness of the necessity and importance of taxes, and vagueness and ambiguity of existing legal regulations.

2.1. High rate of gray economy

The environment in which business entities operate in the Federation of BiH and BiH is characterized by a high rate of the gray economy, which appears in almost all areas of economic activity in various forms. The shadow economy, in the broadest sense, represents economic activities over which the state does not have adequate supervision. It can be said that it is any illegal economic activity aimed at gaining benefits for oneself and one's own account, to the detriment of other individuals, economic entities, the state and the general interest. The existence of the gray economy means that a large number of taxpayers avoid paying taxes, and therefore operate unregistered, with unregistered workers, avoid applying the prescribed standards and carrying out the prescribed administrative procedures, and thus act in contradiction to the adopted legal regulations. According to available information, the gray economy amounts to approximately 30% of the gross social product. Such a high level of the gray economy indicates the non-functioning of the system, and the inefficiency of the state and its institutions, which results in a decrease in public revenues and poor filling of the budget, which lowers the standard of budget beneficiaries, as well as all citizens of our country. In order to increase tax revenues, it is necessary to increase tax bases by preventing or reducing the gray economy. According to some estimates, the reduction of the gray economy by 1% leads to an increase in public revenues by about 30 million convertible marks. In order to prevent and reduce the gray economy, a systematic and coordinated action of several subjects and factors is necessary. The gray economy

can be successfully solved by the synchronized action of all control bodies and courts on the one hand and by passing laws that do not encourage the gray economy on the other hand. It can be said that important factors for reducing the gray economy are: a good legal framework, good control of borders and imports, reduction of cash in payment transactions, more effective work of control-supervisory authorities and courts, whereby sanctions should be quick and measured. (Isović, 2016, 8)

In addition to all of the above, excessive work load contributes to a large extent to the gray economy. The levies, taxes and contributions prescribed by law, for each employed worker consist of 41.5% of contributions and 10% of income tax. For comparison, the contribution rate in Croatia is 36.5%, while the income tax rate ranges from 12% to 40%. The contribution rate in Serbia is 36.55%, while the income tax rate is 10%. A more detailed comparison will be given in the part of the paper with the title Comparison of direct taxation in the Federation of BiH with direct taxation in the EU. According to the legally prescribed rates, it can be said that they are very high, very high, and are at the very top compared to the surrounding countries and the EU. Namely, according to the World Bank study on public sector reform in Bosnia and Herzegovina, a high tax wedge contributes to the non-reporting of workers, which leads to unfair competition between companies that respect regulations and those in the informal economy. The study documents that the tax wedge for workers in Bosnia and Herzegovina, who receive 1/3 of the average EU salary, is among the highest in Europe. The tax wedge otherwise represents the ratio between the total amount paid for work, i.e. what the employer pays for the registered worker and what the employee effectively receives. In the Federation of Bosnia and Herzegovina, the tax wedge for a single worker who works for an average gross salary and has not received a holiday allowance is 45%. For this worker, who receives 782 KM (without recourse), the employer must pay 646 KM in taxes and contributions. In the event that the worker receives a holiday, then the tax wedge is reduced to 43.9%. (Kumalić, Karalić, 2019, 4)

Therefore, in order to avoid paying such high expenses, employers prefer to work unregistered, that is, they do not report the activity they are engaged in, and they do not report the income in full. Also, if they are registered, they employ workers who do not report to the competent institutions, giving them a slightly higher salary for their work as compensation. Also, it is a common phenomenon that workers apply for the minimum wage, and that the prescribed obligations are paid on the same, and that the workers are paid the rest of the salary "on hand" without paying the obligations. In addition to the above, there is a phenomenon that workers are employed on the basis of a work contract, instead of an employment contract, although there is no legal basis for the same. However, employers do this for the reason that in this way they significantly reduce the payment of obligations, considering that the participation of taxes and contributions in the payment of the net salary is 70.74% in the employment contract, and 12.11% in the work contract.

All of the above makes the gray economy more and more present in our environment, and points to the necessity of introducing many changes in society and legislation in order to reduce it and ultimately eradicate it.

2.2. Undeveloped tax awareness about the necessity and importance of taxes

Tax evasion is generally present in our country. Many business entities work unregistered and thus do not pay any of the obligations prescribed by law. This happens for a variety of reasons. One of the reasons is inadequate sanctioning by the competent authorities. For example, the

prescribed minimum fine for work without authorization is 500.00 KM, although in this case, in addition to illegal work, the entities do not report workers or record turnover. On the other hand, the penalties for registered business entities are multiple and very high. The minimum prescribed fines for unregistered workers range from 2,000.00 KM for natural persons to 8,000.00 KM for legal persons, the minimum fines for failure to register turnover range from 3,000.00 KM for natural persons to 3,500.00 KM for legal persons, and these are only some of the sanctions prescribed by law. Therefore, many entities think that it is more profitable for them to work unregistered, and that if they are "caught" in doing so, they pay a small fine, than to register, report workers, and be fiscalized, and that they have very high costs for legal work, and that if they do not comply with all legally prescribed provisions, they pay very high fines.

Furthermore, one of the reasons for avoiding paying taxes is insufficiently developed awareness of the necessity and importance of paying taxes. That is, there is still not enough awareness of the importance of the overall well-being of society, to the detriment of the individual profit of the individual as an integral part of it. Individual taxpayers and citizens are not sufficiently aware of how important it is for society and the state to collect as much public revenue as possible in their budget, as well as what is financed from the budget. They are unaware of the fact that the more public revenues are charged and collected, society has the opportunity for greater social benefits, investments in education, health, as well as for investments that will lead to an increase in employment and prevent the departure of young educated people. This leads to the overall development of the country, as well as to a better life and a higher standard of citizens.

It can be said that raising the overall awareness of taxpayers and citizens about their obligation to declare and pay taxes plays a very important role in the increase of public revenues. In order to raise awareness that taxes must be paid, it is necessary to establish a system that will enable everyone to have equal rights and obligations, regardless of which part of the country we live and work in. It is also necessary to strengthen the function of supervision, as well as the role of the public and the media, in order to influence citizens to report all irregularities and illegalities in taxpayers' operations to the supervisory authorities. In this case, the role of the state, which should strengthen tax awareness with a specially designed marketing approach, is very important. In addition to all of the above, it is necessary to eliminate all irrational spending by the state, and direct the funds collected through the collection of public revenues to the largest possible extent into the development component, into investments and modernization of the state so that citizens and society feel the fairness of the tax system, that is, so that they know that are funds that they give to the state intended for them and future generations, and not to finance the expenses of the ruling structure. (Kumalić, Karalić, 2019, 4)

2.3. The vagueness and ambiguity of existing legal regulations

One of the most significant features of the complicated tax system in BiH, as well as the system of direct taxation in the Federation of BiH, is the vagueness and ambiguity of the legal regulations that govern the payment of taxes, contributions, fees, fees and more. It often happens that the existing laws are not clear, and doubts and ambiguities arise when applying them. This is why by-laws are adopted, all with the aim of clarifying the adopted laws. However, in addition to the by-laws that refer to certain laws, certain items in the laws are not entirely clear and the opinion of the institutions is requested in order to fully clarify the application of the legal provisions. All of the above makes it difficult for business entities to work, and additionally affects the ineffective collection of direct taxes in the Federation of Bosnia and Herzegovina.

An example of uncertainty and clarity is the definition of related parties in accordance with the Law on Profit Tax. This is particularly important because related parties are treated and taxed differently from others. Namely, according to the aforementioned law, the term related persons includes any two persons if one person acts or is likely to act in accordance with the guidelines, requirements, suggestions or wishes of another person or if both act or are likely to act in accordance with the guidelines, requests, suggestions or the wishes of a third party, regardless of whether those directions, requests, suggestions or wishes have been communicated. The following persons are considered to be related persons in particular: a) spouse and common-law partner, adopted children and descendants of adopted children, parents, adoptive parents, brothers and sisters and their descendants, grandparents and their descendants as brothers and sisters and parents of a married or common-law partner; b) a legal entity and any natural person that directly or indirectly owns 25 percent or more of the value or number of shares or voting rights in that legal entity; c) two or more legal entities if one natural person or a third party directly or indirectly owns 25 percent or more of the value or number of shares or voting rights in each legal entity. In this case, the very concept of related persons is unclear, except for the persons specifically listed in the law. Namely, the question arises as to who these persons are who will act in accordance with the guidelines, requests, suggestions or wishes of other persons, regardless of whether these guidelines, requests, suggestions or wishes have been communicated, as well as their connection. For example, the dilemma is whether two companies are connected, if an employee of one company, and at the same time a relative of the owner of the same, is appointed as a director of another company based on a management contract, as well as if the owner of the first company will have influence on him. In order to revise the aforementioned ambiguity, the words "any two persons" should be avoided in the definition of a connected person, because that term itself is so vague and unclear. Also the words "regardless of whether such directions, requests, suggestions or wishes have been communicated" are very vague and ambiguous. Both provide a lot of opportunity for abuse and a subjective view of connectivity.

Furthermore, the income tax law defines that taxable income from non-self-employment is also considered: all other income based on and in connection with non-self-employment. In accordance with the above, the question arises as to what these other incomes are and how to determine them. In practice, this is reflected in the treatment and taxation of benefits that company employees receive by participating in certain commissions and the like, during and after working hours. The usual practice is to tax the same. "small contributions" regardless of the time and manner of holding those commissions. However, there is also an opinion that all jobs that employees perform for their employer are treated as non-self-employment and taxed accordingly, i.e. "full contributions". In order to revise this ambiguity, it should be specified specifically what other incomes are, and in particular, the way of treating work in commissions and the like should be introduced into the law.

An example of ambiguity is the treatment of sanctions for undeclared employees. Namely, according to the Law on Tax Administration, an unregistered worker is treated as an illegality in business and is punished with a minimum fine of 500.00 KM for natural persons and 3,500.00 KM for legal persons, while the same illegality under the Law on Uniform to the system of registration, control and collection of contributions is punished with a minimum fine in the amount of 2,000.00 KM for natural persons and 8,000.00 KM for legal persons. This also represents a lack of clarity in the actions of persons who carry out inspection supervision and enables inequality in actions, as well as the abuse of legal provisions. In order to revise this ambiguity, penal provisions that treat the same irregularities and illegalities in all legal regulations should be harmonized.

With the aim of more efficient and better collection of direct taxes, it is necessary to focus special attention on legal regulations in the field of direct taxation. That is, it is necessary to revise the existing ones and adopt new legal regulations, but in such a way that they are clear and simple, and that they do not produce ambiguity and vagueness when applied, as well as that they minimize the need for the adoption of by-laws in their content, except in the domain of technical implementation. Among other things, this simplicity should be reflected in concreteness when specifying, avoiding certain terms such as any and others, and especially should avoid treating the same things in a different way in two or more laws.

2.4. Share of direct taxes in total public revenues in the Federation of B&H

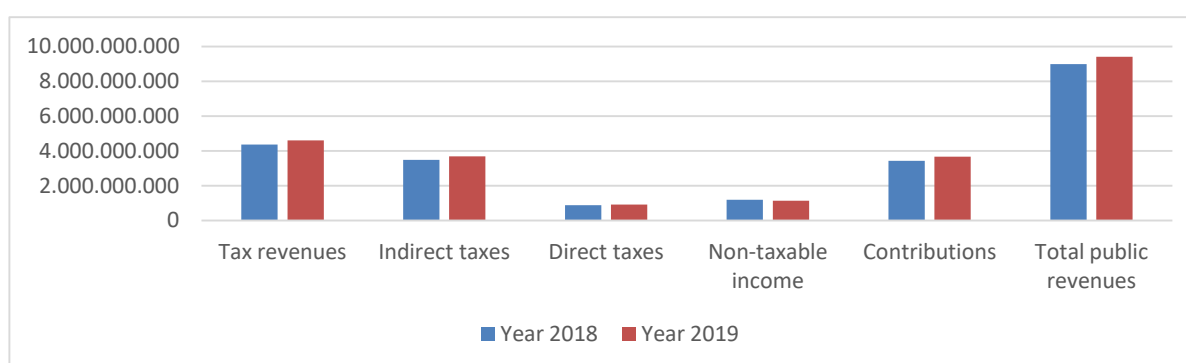
The share of direct taxes in total public revenues in the Federation of Bosnia and Herzegovina is at a very low level. There is a significant difference in the ratio of participation of direct taxes to indirect taxes, and this difference increases significantly when direct taxes are compared to total public revenues. According to the consolidated overview of realized revenues for 2019 in the Federation of BiH, presented by the Federal Ministry of Finance, the total collection of tax revenues in the Federation of BiH in 2019 amounted to 4,597 million KM and is 5% higher than in 2018. In the structure of tax revenues, the ratio of participation between total indirect and total direct taxes in 2018 and 2019 was 80:20 in favor of indirect taxes.¹¹

Table 1: Overview of collected public revenues according to the above report:

Type of income	Year	
	2018	2019
Tax revenues	4.358.794.461	4.596.933.304
Indirect taxes	3.481.150.318	3.677.976.067
Direct taxes	877.644.143	918.957.237
Non-taxable income	1.196.614.562	1.143.414.615
Contributions	3.430.695.567	3.665.911.042
Total public revenues	8.986.104.590	9.406.258.960

Source: independent work of the author based on available data.

Graph 1: Graphic display of collected public revenues according to the listed report.



Source: independent work of the author based on available data.

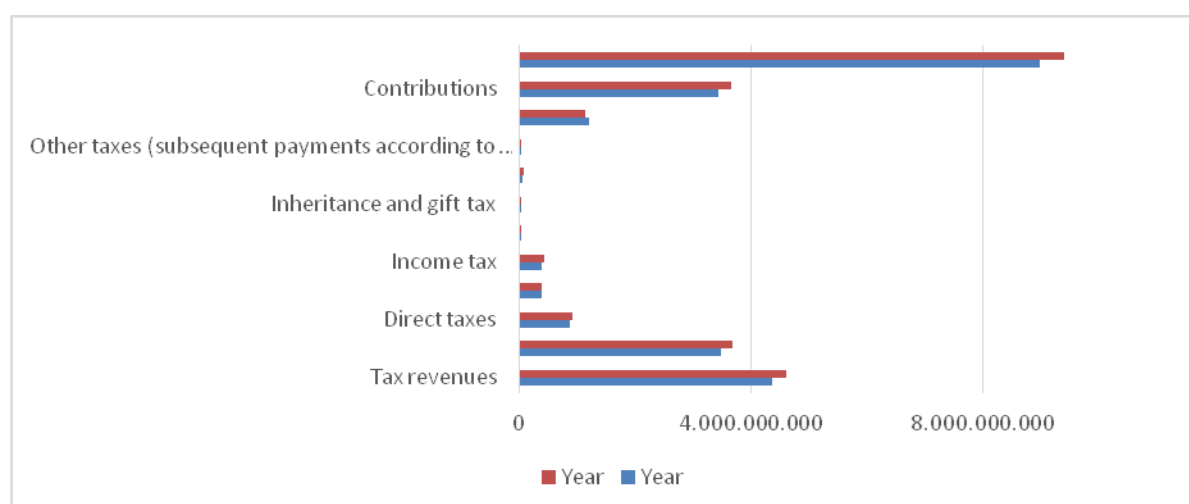
¹¹ Annual consolidated review of realized revenues for 2019 in the Federation of Bosnia and Herzegovina, p.5.

From the tabular and graphical review of collected public revenues in the Federation of BiH for 2018 and 2019, it can be seen that the ratio of revenues collected from direct and indirect taxes is 80:20 for both reference years. The review also shows us that the share of direct tax revenues in total public revenues is 9.77% the same for both reference years, which is at a very low level.

Table 2: Overview of public revenues with classified direct taxes:

Type of income	Year	
	2018	2019
Tax revenues	4.358.794.461	4.596.933.304
Indirect taxes	3.481.150.318	3.677.976.067
Direct taxes	877.644.143	918.957.237
Profit tax	394.591.871	388.280.446
Income tax	381.856.947	422.101.055
Property tax	32.316.356	36.088.537
Inheritance and gift tax	2.334.497	3.317.484
Real estate turnover tax	64.648.375	66.967.169
Other taxes (subsequent payments according to regulations that are no longer applicable)	1.896.097	2.202.546
Non-taxable income	1.196.614.562	1.143.414.615
Contributions	3.430.695.567	3.665.911.042
Total public revenues	8.986.104.590	9.406.258.960

Graph 2: Overview of public revenues with classified direct taxes.



Source: independent work of the author based on available data.

According to the tabular and graphical overview presented, the share of profit tax in total public revenues for 2018 and 2019 is 4.39% and 4.13%, while the share of income from income tax is 4.25% and 4.49 % of total public revenues. The share of property tax in total public revenues is 0.36% and 0.38%, the share of inheritance and gift tax is 0.03% and 0.04%, the share of real estate sales tax is 0.72% and 0.71 % of total public revenues.

Therefore, according to the presented reviews, it can be said that direct taxes do not have a satisfactory share in the total public revenues in the Federation of Bosnia and Herzegovina, and their share needs to be increased. The increase in income from profit tax can be increased by creating a favorable economic environment in order to increase direct foreign investments, by increasing society's awareness of the necessity of paying taxes, by reducing the gray economy, by clear legal solutions, by a better and more efficient supervisory function, as well as by better coordination of executive, legislative and judicial authorities. An increase in income from income tax can be achieved by a wider coverage of tax sources, by introducing progressive taxation of income from work. Then, by introducing dual taxation, i.e. progressively tax income from work, and tax income from capital at a lower or at least uniform tax rate. Also, it is very important to expand the system of tax benefits either to the joint-stock company, to the individual, or to the company and the individual at the same time.¹² Increasing property tax revenue can be achieved by increasing the tax base by registering new property, improving the determination of property value to reflect the real market value, as well as by increasing the tax rate for certain categories of property.

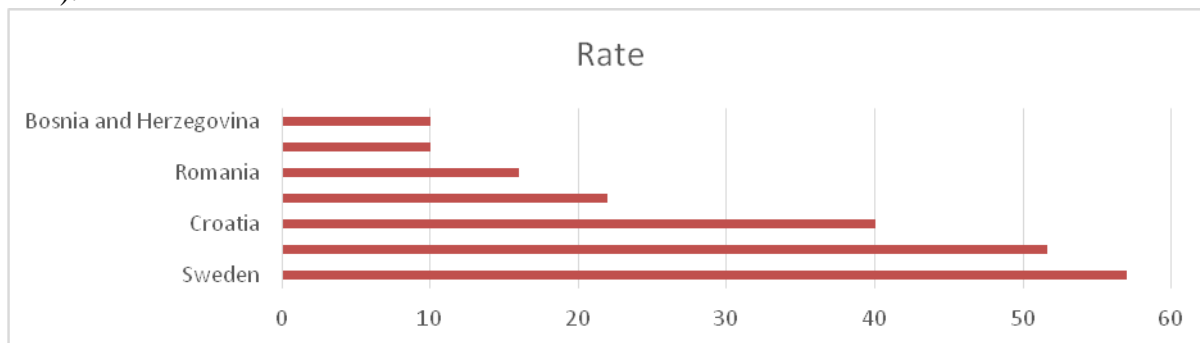
2.5. Comparison of direct taxation in the Federation of Bosnia and Herzegovina with direct taxation in EU countries

Direct taxation in the EU area is not directly regulated by European legal regulations, but is primarily left to individual member states, which shape such taxes with their own tax policy. This form of taxation is aimed at individuals and companies. According to the European Union, the three direct taxes on which the competitiveness of each country depends are: income tax, profit tax and property tax. In the area of the entire union, the role of the Parliament in the case of proposals by individual members to change certain rates of direct taxes is limited to consultation, although through resolutions it tries to be involved in determining the basis for calculating such taxes in the home countries.

However, most agreements in the field of direct taxes are outside the competence of Community legislation. At the same time, Article 65 of the TFEU, which refers to the free movement of capital and income, also allows member countries to treat taxpayers who have different residences and different places of investment of their funds differently. Within the EU, countries collect their revenues equally from direct taxes, while countries with a less developed social system, such as Lithuania (17%), Bulgaria (18.9%), Hungary (18.7%) and Slovakia (19.1%), have much lower revenues from direct taxes. (Journard, 2002) The greatest influence on the amount of income tax in the EU is the degree of economic development, which means that relatively richer countries have higher income tax rates in the highest income bracket. Therefore, the leader is Sweden, whose highest rate is 57%, followed by Finland with 51.6%, where they are economically developed enough to apply it. It is also surprising that Croatia is extremely high with a progressive rate of 12% to 40% for the highest income class, which increases even more when local surcharges are added, which are charged on annual salary amounts over 21,000 euros. Such a high rate greatly inhibits economic development and discourages potential highly profitable activities that are looking for highly educated and qualified labor that Croatia can provide them, to come. Countries like Bulgaria (10%) and Romania (16%) should serve as an example of countries with similar development as Croatia, which have a fixed rate and grow faster than Croatia, attracting modern industry and the IT sector. But even Poland, which is about 30% more developed, charges a single rate of only 22%, and only salaries that are four or more times higher than the average salary are added another 7%. (Raić, 2016, 19-20) Income tax rate in Bosnia and Herzegovina it is 10%.

¹²Law on income tax with analysis, p.2.

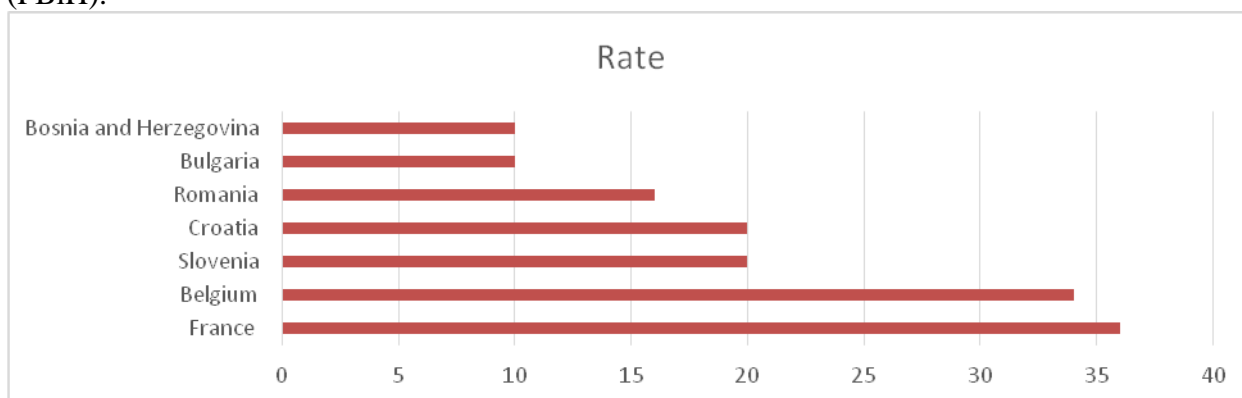
Graph 3: Comparative presentation of income tax rates in some EU countries and BiH (F BiH).



Source: Independent creation of the author based on available data.

Harmonization of profit tax at the EU level has not been significantly achieved for now, considering that each member state has a different system of taxation with profit tax. In the last few years, a large number of countries within the EU have changed the basis of income tax through the introduction of benefits for investments in research and development or physical capital, as well as by limiting the possible deductions of other items. In addition, the trend of decreasing legal and average rates continued, which fell from 23.7% in 2012. to 23.5% in 2015. These rates were changed the most by Great Britain, Slovenia, Greece, and the Netherlands, while some, such as Finland, increased fees and surcharges that apply only to the largest companies, which increases the marginal tax rate. In the EU, there are now 27 corporate tax systems where the amount ranges from 10% to 37%. These taxes had a tendency to fall during the crisis period, but today one can see their slight increase, especially in EU members who are more developed, so France has the highest regular rate somewhere around 36%, and Belgium is close behind with 34%, while Bulgaria has the lowest. with 10% and Romania with 16%. In Croatia, this rate is the same as in Slovenia, i.e. 20%. (Raić, 2016, 21-22) The profit tax rate in Bosnia and Herzegovina is 10%.

Graph 4: Comparative presentation of profit tax rates in some EU countries and BiH (FBiH).



Source: Independent creation of the author based on available data.

Property tax is one of the oldest forms of taxation. The significance of this tax within the EU is not so great because it has largely been replaced by income tax, which is easier to collect. However, the property tax has remained in a large number of countries, where it mainly forms the revenue of local budgets. Property tax can take the form of property tax or net property tax.

Property tax is usually levied once a year on real property: houses, apartments and land. Tax on net assets usually includes taxation of net assets, i.e. total assets (movable and immovable) minus liabilities for those assets, most often liabilities for housing loans. However, the net property tax is currently applied only by some EU members such as: France, Finland and Spain. As already mentioned, property taxes are less important today, and therefore their contribution to the country's budget is not large. It even decreased compared to 1965 when it brought in an average of 7% of income and 1995 (6%). Today, the rates mostly range from 1% to 3%, and apartments and houses where their owners live, as well as the costs of improving the quality of real estate and land, are often excluded from the tax base.

Taking into account all of the above, and comparing the tax rates of some EU member states with the tax rates in the Federation of BiH and BiH, it can be seen that the tax rates for direct taxes in the Federation of BiH and BiH are among the lowest in Europe. Lower tax rates in the area of direct taxes, such as: corporate profit tax, personal income tax and property tax, lead to greater tax competitiveness, which is of particular importance for underdeveloped and developing countries, i.e. countries that have a pronounced need for greater concentration of investment activities, with the aim of significant economic growth, which is difficult in these countries. In these countries, there is a pronounced need for foreign direct investments due to the fact that available domestic investment capital is at a low level. Tax benefits are a significant factor in assessing how attractive an economic area will be for investment. Therefore, taxes can significantly influence the increase in investment activities. However, taking into account the very high tax burden of work in the Federation of Bosnia and Herzegovina, which is such because of the very high rates of mandatory contributions in the total amount of 41.5%, as well as mandatory fees and taxes, we come to the conclusion that the high price of work, one of the main causes for the emergence of the gray economy, reduced employment, and low economic development of the country, and that it ultimately significantly reduces the flow of foreign direct investments.

CONCLUSION

Given that the constitutional arrangement of the state of BiH is a system of direct taxation under the jurisdiction of the entities that prescribe and enact legal legislation on the basis of which direct taxes are collected. In the Federation of BiH, the collection of direct taxes is the responsibility of the Tax Administration, which collects them based on the Law on Tax Administration and other relevant laws. The current legislation is very sketchy, unclear and ambiguous. For this reason, by-laws are continuously passed in order to clarify some provisions of the law, which further complicates the already complicated situation related to the collection of direct taxes. In general, the attitude of the population and business entities is to avoid paying taxes, which is a consequence of insufficiently developed awareness of individuals and society about the necessity and importance of paying taxes. This leads to the emergence and growth of the gray economy, which is at a very high level in the Federation of Bosnia and Herzegovina. All of the above makes the system of direct taxation in the Federation of BiH insufficiently efficient and effective, and affects the low level of direct tax revenue participation in total public revenues, which ultimately leads to poor filling of the budget, insufficient economic development, and prevents the prosperity and development of society in the whole. Furthermore, by comparing the data on the tax rates of direct taxes in the Federation of Bosnia and Herzegovina with the tax rates of direct taxes in neighboring countries and some member states of the European Union, the conclusion is reached that the system of direct taxation in the Federation of Bosnia and Herzegovina has a lower nominal tax burden than is the case in most countries of the European Union. However, analyzing the total tax burden of labor, it is observed that the tax burden of labor in our country is very high. Given that the tax burden of labor expresses the proportional difference between the total costs

borne by the employer for the employee and the employee's net salary, therefore the tax burden of labor affects the incentives for work and employment of the workforce, i.e. the composition of the tax burden of labor affects the supply and demand of labor. A lower tax burden on labor leads to higher employment, due to the fact that the tax obligations of economic entities are reduced, and thus the volume of the shadow economy, i.e. the black labor market, is reduced. In accordance with the above, it can be concluded that the high rate of the gray economy is a direct consequence of the excessive tax burden on labor. Furthermore, the Federation of Bosnia and Herzegovina, due to insufficient economic development, particularly strives to attract foreign direct investments that would enable the development and technological progress of Bosnia and Herzegovina's economy, as well as the employment of the working-age population, which leads to long-term economic growth and a better standard of living. Therefore, low rates of direct taxes are particularly important, which are very stimulating for business entities that want to invest in order to achieve the highest possible profit. This is supported by various tax benefits that are defined by legal regulations, which in fact represent tax concessions to taxpayers who invest in our country, which results in a reduction of public revenues based on their tax liability. However, the reduction of public revenues caused by lower tax levies is acceptable, because it will ultimately have a positive effect in terms of increasing economic growth conditioned by the volume of investment activities, which consequently implies the creation of new tax revenues. Therefore, bearing in mind the importance that taxation has on investment activities, the system of direct taxation in the Federation of BiH and BiH as a whole, makes our country very competitive with the aim of greater concentration of foreign direct investments. However, many other factors, such as pronounced political instability and excessive work load, influence the fact that foreign investments in our country have not reached the level that they should in terms of tax competitiveness. Excessive tax burden, i.e. high cost of labor is one of the main reasons for the above, and the same has a negative impact on employment, insufficient investments by foreign and domestic investors, and especially on the high level of the gray economy.

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FINDING THE PRECIOUS: THE ROLE OF SELF-ESTEEM WHEN PURCHASING LUXURY GOODS

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Abstract

This study explores the impact of self-esteem on the consumption of luxury products. It investigates whether buying a luxury product enhances the owner's self-esteem and leads to more positive attitudes towards oneself. It analyzes how different levels of self-esteem (low vs. high) impact a consumer's decision to buy a high-end product. The data collection tool used for this research is an online questionnaire that was distributed via social media and email. To analyze the data, descriptive statistics, correlation and regression analyses were used. The research results indicate a small negative correlation between consumers' self-esteem and the luxury consumption tendency. In other words, the higher the consumer's self-esteem, the lower the tendency to buy a luxury product. This suggests that low self-esteem consumers pursue self-enhancement motive rather than self-verification. It indicates that marketing luxury goods, using only extrinsic motives and catering only to status seekers might not be the most compelling way to attract all luxury buyers. This study is focused solely on consumers from B&H. The influence of other aspects of luxury purchasing experience, such as brand image, lifestyle, quality, was not considered in this study. Future researches can utilize other self-esteem scales that might reduce the consumers' bias and tendency to characterize themselves as individuals with high self-esteem. This research is the first attempt to analyze the relationship between the self-esteem and luxury consumption on the B&H market and provides valuable insights for marketers of luxury products.

Keywords: self-esteem, luxury consumption tendency, luxury characteristics, prestige, conspicuous consumption.

JEL classification: M310 Marketing

1. INTRODUCTION

From \$100,000 Hermes bags to high-end Rolex watches, businesses across industries charge a premium price for products that offer almost equivalent functional benefits as their cheaper counterparts. Their marketing strategies rely on providing intangible values, such as social status, exclusivity, prestige, to justify the higher price. The consumption of luxury goods has seen an exceptional increase over the years. The global personal luxury goods market has been estimated to US \$285.1 billions in 2020 and is expected to increase to US \$388 billions by 2025 at a CAGR

of 6.4% (Statista, 2020). This continuous growth since the 1990s is attributed to the democratization of the luxury market (Dubois & Laurent, 1995; Truong, 2009). The market is no longer exclusive to the elite due to the increased spending of the middle class, increased demand from emerging markets (China and India), and expansion of the luxury category (Hudders, Pandelaere & Vyncke, 2013). In other words, luxury market is no longer a small sector aimed only to the "select lucky few" and can now be purchased by more people (Kapferer & Bastien, 2012). In this ever-growing market, it is pivotal to understand all of the underlying factors influencing a consumer's decision to purchase a luxury product. Many marketers have examined extrinsic motivational factors such as social recognition and status when developing promotional strategies (e.g. Shao, Grace & Ross, 2019). However, there is little research on the role of intrinsic motivational factors in acquiring luxury goods (Shahid & Paul, 2021; Truong & McColl, 2011), and more specifically, the role of self-esteem as an antecedent of luxury consumption behavior (Truong & McColl, 2011).

Self-esteem has been a topic of research for many authors, and it is considered one of the most studied behavioral science constructs (Khalek, 2016). This is because consumers are affected by self-esteem in their purchasing decisions (e.g. Branden, 1994) and are extensively driven to obtain and maintain high levels of self-esteem and are ready to protect it when it is threatened (Pyszczynski et al., 2004; Banister & Hogg, 2004). It is an important determinant of consumer behavior, and according to Yann & McColl (2011), consumers seek to enhance their self-esteem or self-worth through the acquisition of luxury brands. Therefore, appealing to consumers' self-esteem might be a compelling way to influence one's desire to buy luxury products.

Previous research failed to find an agreement concerning the effect of self-esteem on luxury consumption. In their study, Hudders & Pandelaere (2012) imply that self-esteem is positively related to luxury consumption. They also reported higher self-esteem among respondents who purchased a luxury brand compared to those who acquired a non-luxury brand. One of the reasons lies in the fact that high self-esteem consumers tend to self-enhance and are more inclined to choose superior (luxury) products (Stuppy, Mead & van Osselaer, 2019).

However, Sivanathan & Pettit (2010) discovered a higher preference for luxury goods among consumers with bruised self-esteem. Stuppy et al., (2019) claim that consumers with low self-esteem tend to self-verify and consequently gravitate towards inferior products to confirm their pessimistic self-views. A strong correlation has been found between self-esteem and the consumption of luxury goods for self-directed pleasure, suggesting that an individual can maintain or boost self-esteem by purchasing luxury goods (Yann & Mccoll, 2011). Ye, Liu & Shi, (2015) argue that consumers with low self-esteem find it crucial to obtain self-affirmation from others and show a strong affection toward luxury brands. They also analyze this in relation to the consumers' social status, finding that the lower the position is, the deeper the consumers' interest and affection towards luxury brands. They believe that high self-esteem consumers have more affirmative views about themselves and are confident in their social status. Therefore, they show little enthusiasm for obtaining luxury brands in order to strengthen their position in society. This is also supported by Opiri & Lang (2016), who also imply that consumers who have higher self-esteem usually do not engage in buying behavior to boost their already high self-esteem.

On the contrary, some researchers have dismissed the correlation between self-esteem and luxury consumption. In their study, Opiri & Lang (2016) argue that emotional value and self-esteem does not influence attitude and intention to purchase luxury brands.

This paper is based on the self-concept theory, specifically as defined by Rogers (1951) where one of three parts of self-concept is self-esteem (2008), meaning "How much you like, accept, or value yourself, which can be impacted by a number of factors including how others see you, how you think you compare to others, and your role in society". It also corresponds to the

self-determination theory, which is based on the notion that human behaviour is self-determined and develops because of their personal experience and perception (Ryan & Deci, 2008). Consequently, attaining a state of happiness reflects an individual's determination to fulfil those needs (Truong & McColl, 2011). Past researchers have widely used self-determination theory in consumer motivation studies specifically in the context of luxury consumption (e.g. Truong & McColl, 2011; Shahid & Paul, 2021).

The purpose of this study is to determine how self-esteem affects consumer's intention to purchase luxury fashion products. It aims to understand whether buying or using a luxury product enhances the owner's self-esteem and whether it leads to more positive attitudes towards oneself. Additionally, one of the goals of this research paper is to understand how the different levels of self-esteem (low vs. high) impact a consumer's decision to buy a high-end fashion product. Results will provide implications for luxury fashion brand managers to highlight consumption values in marketing strategies.

2. LUXURY CONSUMPTION TENDENCY

Luxury consumption tendency as seen by Dogan, V., Ozkara, B.Y., & Doğan, M. (2018) is a multidimensional construct that includes five dimensions: *uniqueness, expensiveness, symbolic meaning, arbitrary desire, and belonging to an exclusive minority*. It is the first to use a trait-based and consumer-centric approach in measuring participants' tendencies toward luxury consumption. The authors (Dogan et al., 2018) have defined luxury consumption tendency as "the extent of an individual's tendency toward the consumption of unique and expensive products/services, with their symbolic meanings that are arbitrarily desired for some reason such as to send a message to his/her surroundings, to display owned status to others, to promote the self, to render the self as distinct from its surroundings and to move toward higher social classes" (p. 936). In this approach, luxury consumption tendency is considered as a trait that consumers have.

Owning luxury products can help individuals differentiate themselves, achieve their ideal selves and enhance their social image (Solomon, 2015; Vigneron & Johnson, 2004). Luxury consumers seek one-of-a-kind possessions, sometimes even exclusive or limited editions. Some consumers, often categorized as "snobs", are highly driven by their need for **uniqueness**, and for them, a luxury product is deemed more valuable as its perceived uniqueness or exclusivity increases (Amaldoss & Jain, 2005). This allows them to stand out from the masses or to belong to a particular reference group. Luxury products must not only be unique, but they must also be accepted, recognized, and approved by others (Husić-Mehmedović, 2018). Vigneron & Johnson (1999) observe that uniqueness or snobbiness is one of the motivations of prestige-seeking behavior. It is a result of social comparison, proposing that people want to be perceived as authentic and be admired for that. The uniqueness descends from the rarity and scarcity of the product, which initiates the appeal of luxury (Dubois & Paternault, 1995; Yeoman, 2011).

The second notion commonly associated with luxury products is the high price. Guyon (2004) considered luxury products as "look-what-I-can-afford" status symbols whose success is based on the presumed envy of consumers who cannot afford the product. Garfein (1989) suggests that buying an expensive item tells the world you are one of the select few who can afford it. Also, he focuses on a motive of competitiveness and conspicuousness by stating that luxury can evoke a feeling of "I can afford it and they can not; therefore, I am better than they are". This is further supported by Allsopp (2005) who states that higher price creates desirability: not only as a quality signal, but also as an indicator of one's ability to afford it. Dubois, Laurent & Czellar (2001) found that, for many respondents, a very high price is justified due to the high

perceived quality associated with luxury products. A premium pricing strategy is used to strengthen and differentiate luxury brands and to emphasize their exclusivity.

Compared to mass market goods that are highly defined by their functionality and use, luxury products are more associated with different abstract and intangible meanings. The significance of different symbolic facets commonly surpasses the functional benefits (Lebas et al., 1990; as cited in Heine, 2012). One of the main takeaways of the 2019 Luxury report (Meaning.Global) is that meaning is far more important for luxury brands than for any other brands. The report emphasizes that “in luxury, the gap between the functional value of a product and the **symbolic value** of a brand is the greatest in comparison to any other market category. Luxury, in essence, is all about meaning. Luxury products are bought and used primarily because of the message they communicate, the status they display, and the impact they have on the environment (Husić-Mehmedović, 2018). Consumers care what others think of their purchases and the messages that they convey to others. By obtaining luxury, one seeks to portray the image of power and superiority. Those symbolic associations create value for consumers, and they are designed to associate the owner with a desired group, role, or self-image (Vickers & Renand, 2003).

One of the underlying characteristics of luxury is that it is not needed for our everyday lives. When advertising luxury, marketers do not accentuate their functional characteristics, instead they center around one’s aspirations and dreams. By focusing on those symbolic aspects, they “create a strong want” and motivate consumers to invest more. The authors (Dogan et al., 2018) distinguish between a physical need (related to the survival of human beings) and a social need that focuses on social capital. As suggested previously, the physical need is not associated with luxury consumption. Conversely, social need or **arbitrary desire** focuses on people’s longing to be accepted and acknowledged by others. The authors further suggest that luxury goods are desired because they allow for movement up the social class ladder and across vague social class borders. It is in human nature to seek to reach higher social classes to benefit from the image that is associated with them. Hence, for a person who places a lot of importance on social status, or is a member of a higher class, purchasing luxury goods might be a social need. Authors often pertain to this as bandwagon (Vigneron & Johnson, 1999) or patron status (Husić & Čičić, 2009), and the influence of this on luxury consumption is profound. By using luxury goods, people want to feel like they **belong to an exclusive group** whose membership is not easily obtained and is desired by many. This membership fosters higher self-esteem and perceptions of self-importance.

Nevertheless, for the given research, we define luxury goods as products that bring esteem to the owner, apart from any functional utility (Vigneron & Johnson, 2004). The luxury brands and luxury experience are nowadays mainly focused on self-concept, therefore luxury is being very personal and experiential, and this experience is based on consumers’ personal values, desires and goals (Loureiro, Jiménez-Barreto & Romero, 2020). In line with previous studies, Shahid & Paul (2021) suggest that people seeking physical attractiveness and personal achievement are more inclined to buy luxury products. Consumer seeks for luxury consumption to enhance their ‘self’ through an improved luxury experience. Correspondingly, intrinsic motivation leads to subjective happiness more so than extrinsic motivation, and especially in the luxury experience (Shahid & Paul, 2021).

3. THE NATURE AND THE ROLE OF SELF-ESTEEM

Due to its complexity and subjective nature, many different definitions of self-esteem are proposed in the literature, which causes the concept to lose its focus and clarity. Nonetheless, they all share a fundamental assumption that an individual views themselves as an object and,

consequently, forms attitudes or judgments (Durgee, 1986). Accordingly, the most widely acknowledged definition of self-esteem is Rosenberg's (1965, p. 15), who simply defined it as a favorable or unfavorable attitude toward the self. Based on the literature research, we can conclude that self-esteem involves evaluating oneself, which, as a result, leads to an emotional reaction. Hence, it can be supposed that self-esteem has both cognitive and affective dimension, as suggested by Mruk (2006), which provides a better understanding of this construct. He defined self-esteem as "a lived status of one's competence at dealing with the challenges of living in a worthy way over time" (p. 28). In his model, he distinguishes between two fundamental components of self-esteem: competence and worthiness.

Nevertheless, Stuppy et al. (2019) evaluated motives of low and high self-esteem consumers concerning luxury consumption and acknowledged that different views and characteristics of individuals with low and high self-esteem give rise to distinctive needs and approaches to satisfy them. They imply that consumers with low self-esteem tend to self-verify and, in that way confirm their pessimistic self-views and beliefs. Commonly, one would believe that such individuals will seek to enhance their self-views to improve how they feel about themselves. However, this research supported other authors' works (e.g. Dodgson & Wood, 1998; Shrauger, 1975; Swann et al., 1987) and agree that the insecurities and self-doubt of low self-esteem individuals obstruct their persuasion of self-enhancement. In this way, they try to avoid experiencing failure or rejection in the future. On the other hand, they state that high self-esteem consumers tend to self-enhance. The self-enhancement for them entails little cost and reflects how they like to be perceived by others. Since they have positive views about themselves, they want to improve further. Giacomini & Jordan (2017) share the same belief and suggest that individuals with high self-esteem tend to self-enhance more frequently than their low self-esteem counterparts. The authors further suggest that low self-esteem individuals do pursue self-enhancement but only if there is little risk for disappointment or failure.

Self-esteem and consumption values are important in determining consumption behavior because consumers often seek to improve their self-esteem through acquisition of goods (Truong & McColl, 2011), and often love and buy brands that give them self-worth (Aaker, 1997). Consumers chose the brand which are based in their self-concept, and the way how they view themselves (Nyadzayo, Johnson & Rossi, 2020), so authors concluded that there is a strong connection between perceived brand meaning and the consumer's self-concept (Moore & Homer, 2008). Having that in mind, brand associations are used to construct one's self or to communicate one's self to others (Escalas, 2004). Nyadzayo, Johnson and Rossi (2020) concluded that consumers become more connected to a brand through high levels of emotional attachment that in turn increases their dependency to that specific brand.

Truong & McColl (2011) suggest that purchasing luxury goods as a self-reward may be a powerful way to satisfy one's need for self-esteem, meaning that an individual can maintain or boost self-esteem by purchasing luxury goods. However other authors argue to the contrary, that self-esteem does not relate strongly to conspicuous consumption, as Opri & Lang (2016) believe that emotional value and self-esteem had no influence on attitude and intention to purchase luxury brands. People who have higher self-esteem usually would not engage in buying behavior to boost their already high self-esteem, which is consistent with previous research (Chang & Arkin, 2002). When relating this to consumption, the authors imply that low self-esteem consumers tend to gravitate toward inferior products (products of lower quality and price) to confirm their negative self-views (Stuppy et al., 2019). Luxury products would conflict with their self-views. This is based on the belief that consumers evaluate the products and perceive them as superior or inferior in the same manner they perceive themselves. However, this conflicts to other research which implies that low self-esteem individuals seek to improve their position by purchasing and displaying the possession of luxury products (Ye et al., 2015; Opri & Lang, 2016). Since low

self-esteem is considered undesirable, would it not be logical for such individuals to seek upgrade of their position? Having in mind the beforementioned conflicting views regarding the motives of self-verification and self-enhancement, first hypotheses is defined as:

H1: There is a significant relationship between self-esteem and the consumption tendency of luxury goods.

Moreover, the second hypothesis will test whether high self-esteem consumers are less inclined to buy luxury products due to their already high self-esteem. This would mean that they do not pursue self-enhancement motives. This paper investigates whether low self-esteem consumers pursue self-enhancement motive, in contrast to the research of Stuppy et al. (2019).

H2: The level of self-esteem is negatively correlated to the consumption tendency of luxury goods.

4. METHODOLOGY

To analyse the possible impact of self-esteem on luxury consumption, research was conducted in the form of an online questionnaire. Two different scales were used in formulating the research questionnaire. To measure the self-esteem a 10-item *Rosenberg's self-esteem scale* was used (1965), which estimates global self-worth by measuring both positive and negative feelings about the self. For the dependent variable research adopted the *Luxury Consumption tendency* scale by Dogan et al. (2018). This is a multi-dimensional construct and its sub-dimensions are uniqueness, expensiveness, symbolic meaning, arbitrary desire, and belonging to an exclusive minority which are analysed on an 18-item scale.

Descriptive statistics was used to analyse the socio-demographic characteristics of the sample. The majority of respondents were female (83.3%). The highest number of respondents were aged between 46-55 (25.5%) while the second largest age group was those between 18-25 (21.4%). Moreover, 21.1% of respondents are older than 55. The highest percentage of survey participants have completed secondary education (41.9%). Those who obtained a Bachelor's degree account for 30.2% of all respondents followed by 25.3% of those who finished their Master's studies. There were only 8 respondents (2.1%) with a Doctorate and 0.5% of respondents with elementary school education. The largest number of respondents stated that their household monthly income is between 1,000 BAM and 1,700 BAM (33.6%). Almost 21% of participants have a household monthly income lower than 1,000 BAM followed by 17.4% of those whose income is between 1,700 BAM and 2,500 BAM (see Table 1).

Table 1 Demographic and socioeconomic characteristics of respondents

		Frequency	Percent
GENDER	Female	64	16.7
	Male	320	83.3
	Total	384	100.0
Age	Aged 18 – 25	82	21.4
	Aged 26 – 35	68	17.7
	Aged 36 – 45	55	14.3
	Aged 46 – 55	98	25.5

	Older than 55	81	21.1
	Total	384	100.0
EDUCATION	Elementary School	2	.5
	Secondary School	161	41.9
	University (Bachelor)	116	30.2
	Master	97	25.3
	PhD	8	2.1
	Total	384	100.0
INCOME	Less than 1,000 BAM	80	20.8
	Between 1,000 BAM and 1,700 BAM	129	33.6
	Between 1,700 BAM and 2,500 BAM	67	17.4
	Between 2,500 BAM and 4,000 BAM	59	15.4
	More than 4,000 BAM	49	12.8
	Total	384	100.00

5. RESULTS

5.1. Analysis of respondents' self-esteem

Rosenberg's self-esteem scale has demonstrated strong reliability with Cronbach Alpha (α) measuring over 0.700. In our case, the internal consistency of the self-esteem scale was $\alpha=0.816$. The 10-item self-esteem is measured on a 5-point Likert scale and it allows individual score, which could range from 10 (suggesting extremely low self-esteem) up to 50 (high self-esteem). The final individual score represents the sum of scores of all 10 questions. The calculated mean implies that the average self-esteem score was 40.89 (out of 50), meaning that respondents' self-esteem levels can be generalized as high. The researchers have identified an issue with similar measures as they can be largely influenced by one's desire to portray the self positively. Consequently, the scores on Rosenberg's self-esteem scale can be inflated since individuals seek to portray themselves as having high self-esteem. By doing this, they seek to feel better about themselves. The individual self-esteem levels range from the lowest of 13 to the highest of 50 (see Table 2).

Table 2 Analysis of respondents' self-esteem levels

Respondents' self-esteem	
Mean	40.8984
Median	42.0000
Std. Deviation	6.78407
Range	37.00
Minimum	13.00
Maximum	50.00

The analysis of individual items within the self-esteem scale is shown in Table 3. It shows the mean and standard deviation for all 10-items of the scale. For this analysis, we kept the negatively worded items as they are. The highest agreement was recorded with the statement “I am able to do things as well as most other people.” with $M=4.572$. A large percentage of participants (66.41%) completely agree with this statement. Moreover, the respondents feel that they have a number of good qualities ($M=4.500$) and that they are a person of worth at least on an equal plane with others ($M= 4.4297$). Regarding the negatively worded items, 27.60% of respondents would certainly like to have more respect for themselves with an additional 17.97% of those who mostly agree with this statement ($M=3.132$). The lowest mean value was recorded for the statement “All in all, I am inclined to feel that I am a failure” with respondents mostly disagreeing with this statement ($M=1.523$).

Table 3 Mean and standard deviation of self-esteem items

<i>Item Statistics</i>	Mean	Std. Deviation	N
On the whole, I am satisfied with myself.	4.0365	.89017	384
I feel that I have a number of good qualities.	4.5000	.79160	384
I am able to do things as well as most other people.	4.5729	.76127	384
I feel that I'm a person of worth at least on an equal plane with others.	4.4297	1.00664	384
I take a positive attitude toward myself.	4.2630	1.04023	384
*At times I think I am no good at all.	2.3333	1.30006	384
*I feel I do not have much to be proud of.	1.8515	1.17917	384
*I certainly feel useless at times.	2.0625	1.26253	384
*I wish I could have more respect for myself.	3.1328	1.53482	384
*All in all, I am inclined to feel that I am a failure.	1.5234	1.05190	384

5.2. Analysis of the consumption tendency for luxury goods

The reliability or internal homogeneity of luxury consumption tendency was satisfied, since the value of α measured at 0.839. Firstly, each sub-dimension of the scale is analysed to examine the respondents' tendency to purchase luxury products. Generally, we can observe the tendency to take a neutral position when answering the questions related to the uniqueness construct. The highest mean value ($M=3.61$) was recorded for the statement “In my purchase decisions I consider whether the product/service has unique features” (Table 4). On the other hand, the survey participants had the lowest interest for products that are specially produced for them ($M=2.93$) and products/services that have unique features that other products/services do not have ($M=2.99$). In comparison to other dimensions of the scale, the uniqueness construct was perceived as the most important.

Table 4 Uniqueness construct

	Mean	Std. Deviation	N
I desire to purchase a product/service that is specially produced for me.	2.93	1.407	384
I am interested in products/services that have unique features that other products/services do not have.	2.99	1.294	384
In my purchase decisions, I consider whether the product/service has unique features.	3.61	1.162	384
I buy a product/service since it is different from other products or services.	3.03	1.273	384

The second sub-dimension of the scale is expensiveness which analyses the importance of product price for consumers (see Table 5). Based on the obtained results, we can conclude that respondents tend to disagree with the statements. A statement that recorded the lowest mean value is “I do not care about finding the best deal or price” (M=2.16). Almost 41% of participants completely disagree with this. Consequently, we can conclude that respondents seek products/services that are fairly priced or offer a good deal. However, we can notice that the highest mean value (M=2.55) is recorded for “I prefer an expensive product/service over a cheap product/service” with 7.55% of respondents who completely agree and 13.28% of those who mostly agree with this statement.

Table 5 Expensiveness construct

	Mean	Std. Deviation	N
I prefer an expensive product/service over a cheap product/service.	2.55	1.246	384
I do not prefer to buy low-priced products/services.	2.54	1.266	384
I do not care about finding the best deal or price.	2.16	1.196	384
I happily buy expensive products/services.	2.35	1.255	384

The following dimension of the luxury consumption tendency scale is symbolic meaning (Table 6). Broadly speaking, participants assigned low importance for symbolic meaning dimension as a factor in their decision-making. In fact, more than 63% of those who completed the questionnaire disagreed with the statement “I would buy a product/service if it has a luxury symbolic meaning for the people around me” which achieved the lowest mean value (M=1.65). However, 9.64% of participants find it important to own a product/service that means to people around them (M=1.96). Moreover, we can conclude that a vast majority of respondents (59.90%) care more about the product’s functional benefits than what it symbolizes.

Table 6 Symbolic meaning construct

	Mean	Std. Deviation	N
It is important for me to own a product/service that means to people around me.	1.96	1.349	384
When I am buying products/services, I consider what these products/services represent to people around me.	1.92	1.249	384
I would buy a product/service if it has a luxury symbolic meaning for the people around me.	1.65	1.006	384
I care more about what a product/service symbolizes than its functional features.	1.74	1.117	384

The arbitrary desire sub-dimension of the scale includes three questions that examine whether respondents buy products only when they have a specific need for them (see Table 7). Almost 19% of respondents stated that they shop according to their desires even when they do not need to shop (M=3.11). Additionally, 21% of participants mostly agree with this statement. The lower agreement was recorded with statements “I usually buy products/services that I do not need physically but rather emotionally” (M=2.20) and “When I am buying products/services, I do not question whether I need this product/service” (M=2.00). Based on the results, it may be concluded that respondents buy products/services mostly when they have the actual (physical) need for them.

Table 7 Arbitrary desire construct

	Mean	Std. Deviation	N
I usually buy products/services that I do not need physically but rather emotionally.	2.20	1.198	384
When I am buying products/services, I do not question whether I need this product/service.	2.00	1.176	384
I shop according to my desires even when I do not need to shop.	3.11	1.335	384

Next, we will analyze the questions related to belonging to an exclusive minority motive which included three questions (Table 8). The results indicate that respondents care little about belonging to an exclusive minority that can stem from the consumption of certain products. More than 62% of respondents strongly disagreed with this statement (M=1.76). The highest mean value (M=1.97) was recorded for the “I do not enjoy buying a product/service that can be bought by the vast majority of society” statement.

Table 8 Belonging to an exclusive minority construct

	Mean	Std. Deviation	N
I would like to feel that I belong to an exclusive minority through the products/services I purchase.	1.76	1.168	384
It bothers me when many of the people around me have a product/service that I have.	1.88	1.257	384
I do not enjoy buying a product/service that can be bought by the vast majority of society.	1.97	1.262	384

5.3. Hypothesis testing

A Spearman's rank-order correlation was run to assess the relationship between self-esteem scores and luxury consumption tendencies among 384 participants (see Table 9). It is used to test the first hypothesis.

Table 9 Spearman's rank-order correlation

Correlations

		Total Rosenberg score	Total Luxury Consumption Tendency
Spearman's rho	Total Rosenberg score	1.000	-.153 ^{**}
	Correlation Coefficient		
	Sig. (2-tailed)	.	.003
	N	384	384
Total Luxury Consumption Tendency	Total Rosenberg score	-.153 ^{**}	1.000
	Correlation Coefficient		
	Sig. (2-tailed)	.003	.
	N	384	384

^{**}. Correlation is significant at the 0.01 level (2-tailed).

Based on the negative value of the correlation coefficient, we can conclude that the direction of the relationship is negative. This implies that the high scores on one scale are associated with low scores on the other. Therefore, the higher the self-esteem, the lower the consumers' tendency to purchase luxury products. The value of Spearman's correlation is $r = -0.153$ which indicates a small strength of the relationship ($r = .10$ to $r = .29$). This means that we can partially accept the H1 or claim that there is a relationship between self-esteem and the consumption tendency of luxury goods, but it is rather weak.

Consequently, we can accept H2. High self-esteem individuals have a lower tendency to buy luxury products while low self-esteem individuals are more inclined to buy luxury products to enhance their self-esteem. To analyse this relationship further, a linear regression analysis was

conducted where we transformed the dependant variable using log-transformation. The model meets the assumption that residuals are normally distributed as observed by the histogram and P-P plot. Moreover, there are no standardized residuals whose absolute value is higher than 3 and no cases with Cook's distance higher than 1. Therefore, this model better suits our analysis as it meets all assumptions of linear regression. The value of the coefficient of determination (R square) of the adjusted model is 0.030 (see Table 10), which indicates that self-esteem explains only 3% of variance that occurs in the luxury consumption tendency.

Table 10 Regression analysis of the new model

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.172 ^a	.030	.027	.11751	1.965

a. Predictors: (Constant), Total Rosenberg score

b. Dependent Variable: Luxury Consumption Tendency (log)

The significance was tested using the ANOVA test. The obtained value of $F(1, 384) = 11.696, p = .001$ is statistically significant $p < 0.05$ (see Table 11). This indicates that our regression model statistically significantly predicts the luxury consumption tendency. This again supports the conclusion that self-esteem does have an impact on luxury consumption tendency. Since the value of the beta coefficient is negative (-.172), we can conclude that the increase in self-esteem will result in a lower tendency to buy luxury goods.

Table 11 Statistical significance of the new model

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.162	1	.162	11.696	.001 ^b
	Residual	5.275	382	.014		
	Total	5.437	383			

a. Dependent Variable: Luxury Consumption Tendency (log)

b. Predictors: (Constant), Total Rosenberg score

6. CONCLUSION, LIMITATIONS, AND FUTURE RESEARCH

This paper aimed to improve the knowledge on the relationship between self-esteem and luxury consumption tendency. The idea that consumers purchase products that make them feel good about themselves is a basic premise of marketing. Self-esteem has been thoroughly researched in the literature as it has strong implications on many different aspects of human behavior. However, the research gap exists as there has been disagreement about the relationship between self-esteem and purchasing of luxury goods. We wanted to investigate whether consumers with low self-esteem pursue self-enhancement motives and seek products that would boost their self-esteem and enhance their self-views. On the other hand, those with high self-esteem would be less likely to

engage in luxury consumption as their self-views are affirmative and positive. Conducted research gave us insights into the consumer preferences and attitudes toward luxury products in Bosnia and Herzegovina. The obtained results indicate that there exists a minor negative correlation between consumers' self-esteem and the tendency to purchase luxury products. In other words, the higher the consumer's self-esteem, the lower the tendency to buy a luxury product. This suggests that low self-esteem consumers pursue self-enhancement motive rather than self-verification contrasting the research of Stuppy et al. (2019). However, this does not mean that high self-esteem individuals do not engage in luxury consumption. Their motivation might stem from the desire to showcase their status, belong to a reference group, or pursue a certain lifestyle.

Self-esteem is also closely correlated to the fashion and clothing, meaning that consumers with high levels of self-esteem are more likely to exhibit self-confident, and independent fashion behaviours, whereas those with low self-esteem are likely to be fashion followers or non-engaged with fashion (McNeill, 2018). More specifically, luxury consumers associate their consumption with their image and appearance (Husic & Cicic, 2009), and prior studies have emphasised on the impact of consumer vanity as one of the reasons why consumers purchase luxury brands (Netemeyer et al., 1995). According to Abdala & Rossi (2008), vanity is viewed as an excessive feeling of self-esteem, often linked to display of physical appearance, extravagance, and extreme confidence in self-success. Consumers with a greater sense of vanity consume luxury products as these brands symbolise elegance, aesthetics, sophistication, and perfection (Park et al., 2008).

This research makes several important contributions to the current literature of luxury marketing. Previously, academic studies have almost entirely focused on analysing extrinsic motives associated with luxury consumption. Marketers have mostly communicated with consumers via themes based on extrinsic motivations. There is a need to understand the intrinsic motivation of consumption that can capture feelings attached to luxury brands (Opri & Lang, 2016) According to Kasser & Ryan (1996), individuals' intrinsic desires are reflected through their psychological empowerment, self-determination, self-esteem, and well-being, as the perception of self encompasses how an individual think about themselves. Additionally, the research adds to our knowledge of the relationship between self-esteem and luxury consumption and expands the understanding of luxury motivations. From the managerial aspect, the research results suggest that marketing luxury goods, using only extrinsic motives and catering only to status seekers might not be the most compelling way to attract all luxury buyers, but advertising strategies should also appeal to consumers' self-esteem to increase their willingness to purchase luxury goods. In their advertising, luxury brands should also focus on feelings that stem from luxury consumptions and how it relates to one's ideal self. Researchers (Gentina & Delecluse, 2018; as cited in Bakir et al., 2020) have recognized that new generations (more specifically Generation Z) are reshaping the luxury industry and focus more on intrinsic factors. Consequently, marketers need to adapt to the consumers' changing needs and preferences.

The study is subject to a few limitations. The influence of other aspects of luxury purchasing experience, such as brand image, lifestyle, quality, aesthetics, store environment, customer service, product features (durability and longevity) was not considered in this study. These factors might be crucial for some consumers when making a decision to purchase a luxury product. The study predominantly included female respondents and data on income was collected using total monthly household income, which might not clearly indicate the discretionary income available for luxury consumption. In addition, future researches can utilize other self-esteem scales that might reduce the consumers' bias and tendency to characterize themselves as individuals with higher self-esteem.

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THE EFFECTS OF ETHNIC DIVERSITY ON SOCIO-ECONOMIC OUTCOMES IN A POST-CONFLICT ENVIRONMENT – EVIDENCE FROM BOSNIA AND HERZEGOVINA

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Abstract

We rely on existing empirical studies and survey data from post-conflict Bosnia and Herzegovina to investigate the effect of ethnic diversity on several socio-economic outcomes. After dissolution of former Yugoslavia, the related conflicts were harmful for ethnic diversity on the ground, in particular in Bosnia and Herzegovina where the 1992-1995 war induced structural change towards ethnic homogenization, and practically overnight. Yet, almost three decades later, our empirical investigation reveals that where ethnic diversity is preserved and still exists, it gives rise to positive economic consequences to individuals and families living in these areas, to businesses operating in these diverse environments, and finally, to the society through the increased pro-social behavior of individuals with more diverse personal networks. Policy makers in this post-conflict society, and in similar environments, should take into consideration the economic costs of policies supporting ethnic homogeneity over diversity. We argue that these findings can be relevant for the most countries of the Western Balkans and South East Europe.

Key words: ethnic diversity, economic outcomes, conflict, Bosnia and Herzegovina.

Introduction

The effect of ethnic diversity on different socio-economic outcomes is an ongoing research topic investigated in different disciplines, with different methodologies applied, different samples observed, and finally with diverse findings. The effect of ethnic diversity on economic outcomes is not consistent, as the empirical literature identifies heterogeneous outputs in the range from those that report positive effects of increased diversity on socio-economic outcomes to those which report negative effects of ethnic diversity on economic incentives and outputs. As we will see in our theoretical section, not only empirical outcomes are not consistent, we have even diverging theories of which some argue that ethnic diversity is beneficial for economic environment to those which theorize negative consequences on economic outputs. Such heterogeneity in theoretical and empirical findings is hard to systematize using narrative reviews, which has been explored further through quantitative meta-analyses. Indeed, we do identify two meta-analytic research focused on the effect of ethnic diversity on trust (Thisted Dinesen et al., 2020) and native-born white response on increasing ethnic diversity (Kaufmann and Goodwin 2018), which is particularly proposed and used to uncover new authentic information from such diverse empirical studies.

Obviously, doing research with the focus on ethnic diversity is not simple, theoretical and empirical guides are divergent, and one needs to find his/her own ways and strategies how to

proceed. However, what is common to all these research is that the authors investigate how increased ethnic heterogeneity, caused primarily by inflow of immigrants, affects socio-economic environment of previously homogenous environments. What is new in our approach is that we observed the opposite and quite unique direction in the literature, it is the effect of reduced ethnic diversity in previously ethnically heterogenous environment, as we investigate a country that has been ethnically diverse for centuries (Malcolm, 1996). Such approach is unique in the literature, important for empirical investigation, but also the region on which we focus. In this study we observe Bosnia and Herzegovina (BiH), one of the countries of former Yugoslavia, where ethnic diversity had been reduced overnight as a consequence of the Bosnian war (1992-1995), which included ethnic cleansing and related mass fatalities (Olzak, 2011), including genocidal act¹³, all have changed ethnic diversity on the ground, and in a very short run. We thus focus on previously ethnically heterogenous environment in BiH and imposed changes in ethnic diversity during or after the conflict, including the effects on socio-economic environment. To summarize, our paper critically evaluate three empirical investigations conducted in post-conflict BiH, all investigated the effects of ethnic diversity on macro-meco-micro socio-economic outcomes, and link these findings to the broader perspective of Western Balkans and South Eastern Europe. Thus, in our three empirical studies, we investigate the following:

What is the effect of ethnic diversity on individual and family income in BiH?

What is the effect of ethnic diversity on business growth in BiH?

What is the effect of ethnic diversity on pro-social behaviour of citizens in BiH?

The outcomes of all three research studies indicate a positive role of ethnic diversity in BiH economy and society. In BiH, ethnic diversity, where preserved, is not a threat, but an important resource with the potential to be welfare enhancing.

The paper is structured as follows. After introductory part, our next section provide context for investigation discussion the tragic consequences of Bosnian War. The following section reports some of the empirical findings existing in the literature, while the main section reports and critically evaluate findings from three empirical studies conducted on Bosnia and Herzegovina. The penultimate section links the research outcomes to the South East Europe, while the last section concludes.

2. Context of research – why ethnic diversity in Bosnia and Herzegovina matters?

Bosnia and Herzegovina during the past World War II was part of former Yugoslavia, it was one of the six socialist republics, and one of the republics most known for its unique ethnic structure, characterized with diverse ethnicities living in this societies, but dominantly Bosniaks (Muslims at that time), Croats, Serbs, including also other ethnicities. What was former Yugoslavia at the regional level, this was Bosnia and Hercegovina at the state level, ethnically mixed society. The research on ethnic tolerance among different ethnicities prior to the Bosnian war (1992-1995) suggests that different ethnicities in BiH collaborated, all have been ethnically tolerant and inclusive (Dyrstad, 2012). However, this had changed practically overnight in the beginning of 1990's during the fall and dissolution of Yugoslavia. The similar trends came to BiH, producing ethnically related problems within the country and between different ethnicities. Still, the physical violence was mainly exogenously imported at that time through former Yugoslav army,

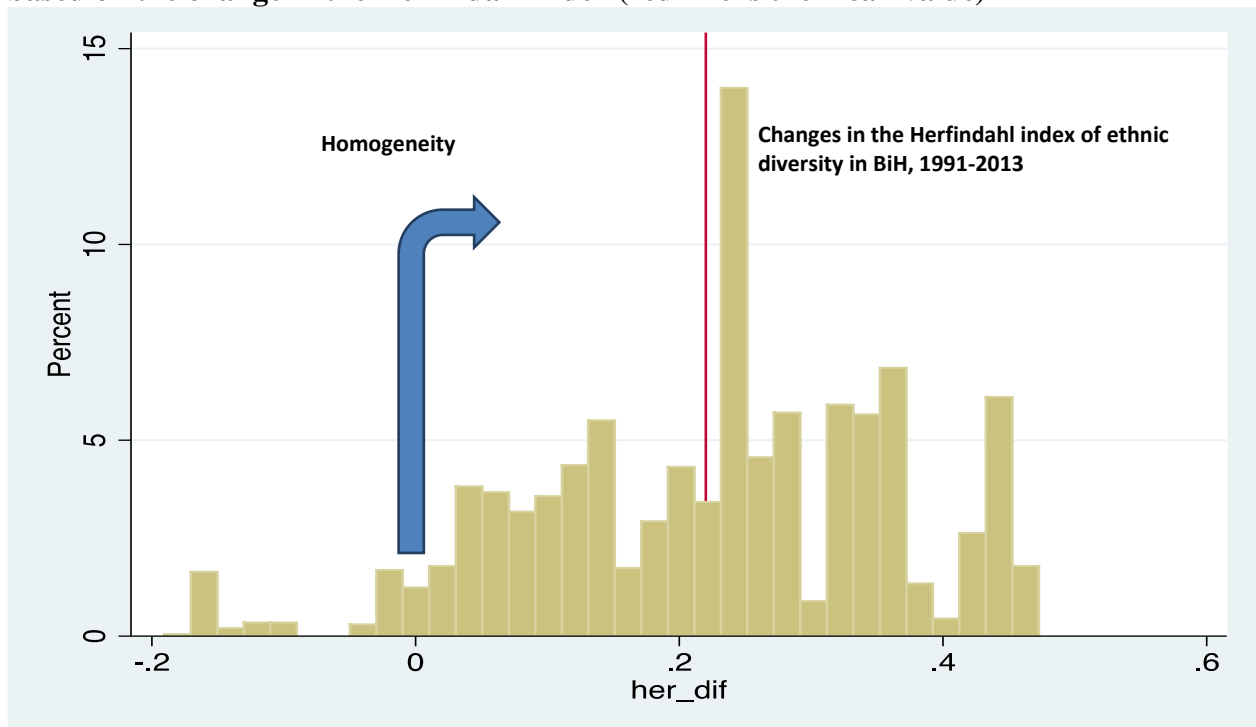
¹³ The massacre of Bosniaks in Srebrenica in July 1995 by Serbian forces was classified by the international courts ICTY and ICJ as genocide, the first such crime in Europe since WWII.

controlled by Serbia's government, and with ambitions to promote interest of one ethnicity through military force, ethnic cleansing of non-Serb population and territorial ambition over Bosnia. The most tragic war in modern European history started, causing massive loss of lives, (around 100 thousands), massive internal and external outflow of population (over 50% in total), and massive destruction of human, physical and social capital in this country (Efendic and Hadziahmetovic, 2015). The pre-war ethnic diversity has been reduced, in particular in the area where ethnic cleansing was the norm, as in Eastern Bosnia, causing a structural shift in ethnic compositions at municipal or lower levels, and by force. The four-year war and its development is not in the focus of this study, but one of the outcomes of this war that we are interested in is that ethnic diversity was seriously damaged, ethnic tolerance was almost fully destroyed, interethnic trust was extremely low, and new start was necessary in the post-war period. The war ended with the Dayton Peace Accord (DPA) signed in Dayton, USA in November 1995. The DPA stopped the war, established new reality following the outcomes of the conflict, new interests of dominant ethnicities, but at least preserving the country's continuity, its sovereignty, territorial integrity with the pre-war borders being confirmed, and giving a hope for reconciliations of society and new start on the ruins of conflict. This included a return of refugees, internal and external migrants to their pre-war places, when massive repatriation of BiH external migrants started in 1996, and indeed helping some proportion of the population to return to their pre-war homes, thus increasing again ethnic diversity on the ground. However, this was far away from the pre-war level, in terms of scale of return, and but also in terms of inter-ethnic mixing that became an issue after the tragic consequences of the war which had ethnic intolerance in its very nature. Hence, ethnic diversity has been only partly restored, many internal and external migrants did not return to their pre-war places, some could not return to fully destroyed villages, while some tried but moved again, and often externally, primarily because of the socio-economic problems they faced on the ground, with unemployment being the biggest challenge in the immediate post-war period, and especially stressful for returnees.

After describing shortly the development of war and post-war period, it is quite clear that ethnic diversity of previously multi-cultural and ethnically inclusive BiH was seriously damaged at the micro level, interestingly still not at the macro level. The country remained ethnically mixed, but changes occurred within borders through scattering of ethnic groups in different regions dominated by one of the dominant ethnicities. This was confirmed in the first and the only post-war census, held in 2013, which showed similar ethnic mix and with similar proportions of ethnicities at the state level as in 1991, while the new data at the lowest level that could be observed, which is municipality level, suggested significant changes in the direction of increased ethnic homogenisation within the country. Our calculation based on 1991 v.v. 2013 census data suggests that, on average, ethnic homogeneity increased by more than 20% at municipal level, which is a structural change with unknown socio-economic consequences. There are only a couple of municipalities where ethnic diversity increased or did not change in comparison to the pre-war level (Figure 1).

The purpose of this study is to look at the consequences of ethnic homogeneity on socio-economic outputs in BiH. We will look at ethnic diversity in BiH both at the municipal level (described through the change in Herfindahl index) and at the individual level of analysis (neighbouring area of living and individual levels of analysis), which will give us possibility to observe the effect with more approaches and methods of measurements. A short look at the literature review follows.

Figure 1. Changes in ethnic diversity in BiH at municipal level, 1991 v.v. 2013 census data based on the change in the Herfindahl index (red line is the mean value)¹⁴



3. Ethnic diversity in diverse literature

Before discussing the effect of ethnic diversity in the literature, the very first issue and challenge is how to measure ethnic diversity in applied quantitative research. Indeed, measuring ethnic diversity is not an easy task and researchers are still struggling to find a unique measure or indicator of ethnicity and diversity, thus different approaches can be found in the literature. As pointed by some authors, ethnicity, ethnic groups, ethnic heterogeneities are all slippery concepts (Fearon 2003). However, many researchers as Posner (2000) and Constant and Zimmermann (2009), or those from Western Balkans region as Efendic et al. (2015), Efendic and Pugh (2018) and Efendic (2020) use different measures of ethnic diversity obtained from primary survey data. Indeed, some authors argue that measuring ethnic diversity through survey instruments is useful having in mind that ethnic perceptions are subjective and the product of self-definition (Posner, 2000). Without going more deeply into this discussion, we accept this approach and rely on survey strategies to observe ethnic diversity in micro-places, which are the data not available in the official statistical sources and being interested for such kind of analysis.

While the measures used to proxy ethnic diversity on the ground are different, the literature review establishes also that ethnic diversity has heterogeneous outcomes in societies, and might have both positive or negative effects on economic performance. If we examine more deeply different empirical studies, we can find a pattern that ethnic diversity effects are different depending on the level of analysis. The majority of studies reporting a negative effect on economic outcomes are macro oriented and often identify different indirect influences on economic growth and development. A positive effect of ethnic diversity is more often reported at

¹⁴ Note, we have calculated the Herfindahl index for three dominant ethnicities including 1991 census data, then 2013 census data, and finally, the difference in this index between two censuses which is presented on Figure 2.

lower levels of economic analysis, such as regions, cities or individuals (Efendic and Pugh, 2018). Some of these studies for different strands of the literature we discuss in turn.

The first approach in the literature is keen to describe that a greater ethnic diversity increases the probability of ethnic tensions and conflicts (Blimes, 2006) which, in turn, have a negative impact on economic incentives and economic performance (Osborne, 2000). Even Putnam's theory claims that ethnic diversity, when imposed to previously ethnically homogenous areas, will decrease social capital of that society. All these approaches rely on arguments that ethnic diversities, fractionalisations, conflicts and prejudices can override economic incentives, leading to poor economic choices, policies, outcomes, and political instability. Hence, ethnically diverse societies are more likely to choose suboptimal social and economic policies, which will cause a negative effects on socio-economic development (Easterly and Levine, 1997). Accordingly, ethnic diversity is typically associated with poorer economic outcomes and slow dynamic in economic growth and development (Collier, 1998; Alesina and La Ferrara, 2005; Goren, 2014).

An alternative perspective and argument which exists in the literature is that the most developed countries, regions and cities today are ethnically diverse and it remains unclear why would one expect that ethnic diversity produces negative socio-economic consequences at the global scale. Proponents of this approach argue that ethnic diversity is associated with various abilities, different experiences, a variety of religious, cultures and traditions, a spectrum of beliefs and practices, and multidimensional ways of thinking, which together may lead the whole society towards greater innovation, creativity and economic performance. In this case, ethnic diversity might be considered as an important asset for social capital and prosocial behavior (Efendic, 2020), human development and welfare (Alesina and La Ferrara, 2005; Bellini 2012). In line with this approach, positive consequences of ethnic diversity are identified at the national level, but also at the levels of regions and cities (Jacobs, 1961; Gertler et al., 2002; Smallbone et al., 2010), it can affect future business development (Efendic et al., 2015), productivity of individuals (Ottaviano and Peri, 2006; Bellini et al., 2012) and individual economic outcomes and well-being (Akerlof and Kranton 2010; Efendic and Pugh, 2018).

Our literature review establishes that ethnic diversity is still the concept which deserves attention of researchers, more should be done to uncover an exogenous effect of ethnic diversity at different levels of analysis and in different contexts. In particular, this seems to be interesting to analyse for societies moving towards ethnic homogeneity, as this is an angle and context not being covered in the literature properly, and something that we address in this study. The comparative review of ethnic diversity influences for different levels of analysis in post-conflict BiH that recorded increase in ethnic homogeneity is reported in the following section

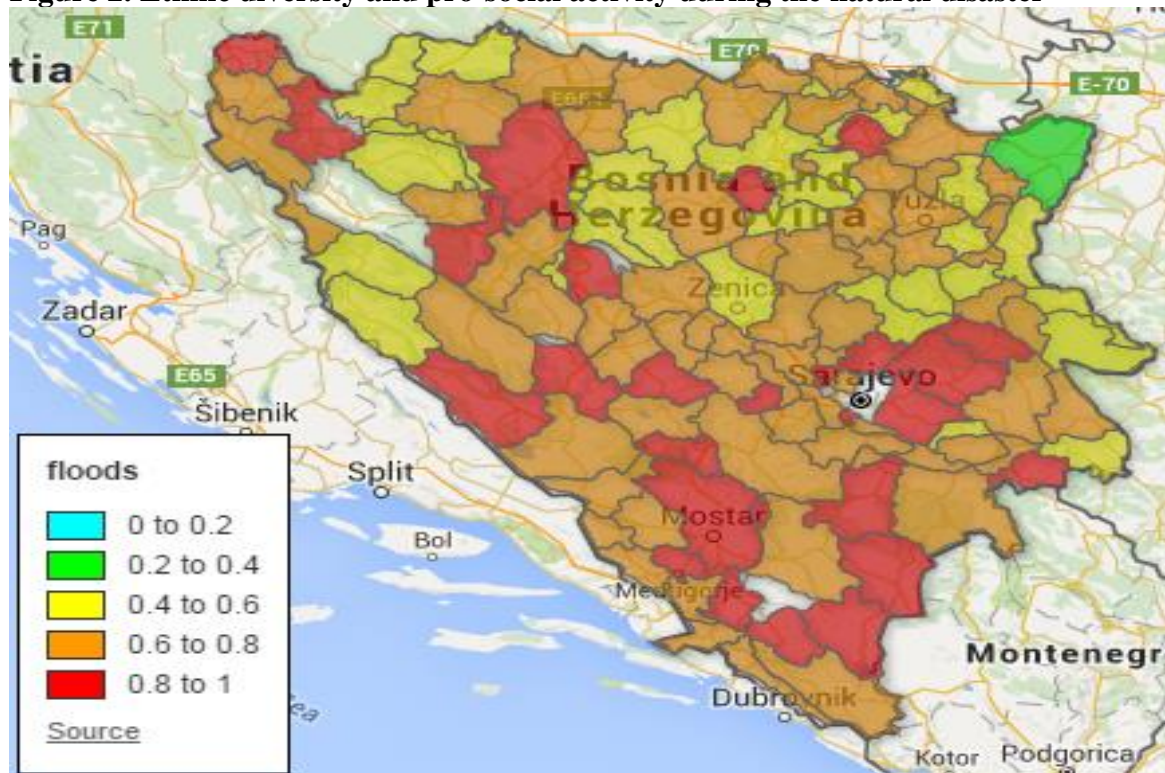
4. The effect of ethnic diversity in Bosnia and Herzegovina

For the purpose of this study we provide critical review of three empirical investigations conducted in post-conflict Bosnia and Herzegovina, being implemented at different levels of analysis, with different data and ethnic diversity measures set-up specifically for primary survey data collected for these studies. This critical review should bring new knowledge based on comparative perspectives of primary studies focused on a country that recorded increase in ethnic homogeneity. These are studies by Efendic, Mickiewicz and Rebmann (2015), Efendic and Pugh (2018), and Efendic (2020), all being published in respectable scientific journals.

The first empirical study is by Efendic et al. (2015) in which authors analyze the effect of ethnic diversity on the aspirations for growth of their businesses among young companies in Bosnia and Herzegovina. The study finds that ethnic diversity in the post-conflict environment of BiH is beneficial for young businesses. Young companies (entrepreneurs) in local areas that are ethnically diverse have systematically higher growth aspirations in comparison to those in ethnically homogenous areas. Such finding suggests that the future prosperity within different regions will depend also on the level of ethnic diversity of these regions, bringing stronger economic growth to more diverse areas through expected growth of young businesses. These results are important when seen in the context of the cross-country economic literature, as this strand of literature implies that ethnic diversity may be associated with negative economic outcomes (e.g. Easterly and Levine 1997; Collier 1998; Easterly 2001; Patsiurko et al. 2012), which is not confirmed in the study focused on BiH's business sector.

The next empirical study investigated responses of BiH citizens during the floods in May 2014, when close to 30% of the country was under water, with huge danger for bear lives in huge part of the country, which were heavily affected by the floods. Interestingly enough, this was the period when general response of the public to this natural disaster was unbelievable high, transparently covered by media reports, and what is important for our analysis, without ethnic issues being identified as important determinants of this response. Simply said, it looked that everyone was involved to help other no matter on their ethnic background. Let us have a look at Figure 2, which reports different levels of citizens' engagement in the period of floods, in the range 0-1, which corresponds to 0-100%. This measure is based on representative survey data gathered in post-disaster period and described in details by Efendic (2020).

Figure 2. Ethnic diversity and pro-social activity during the natural disaster

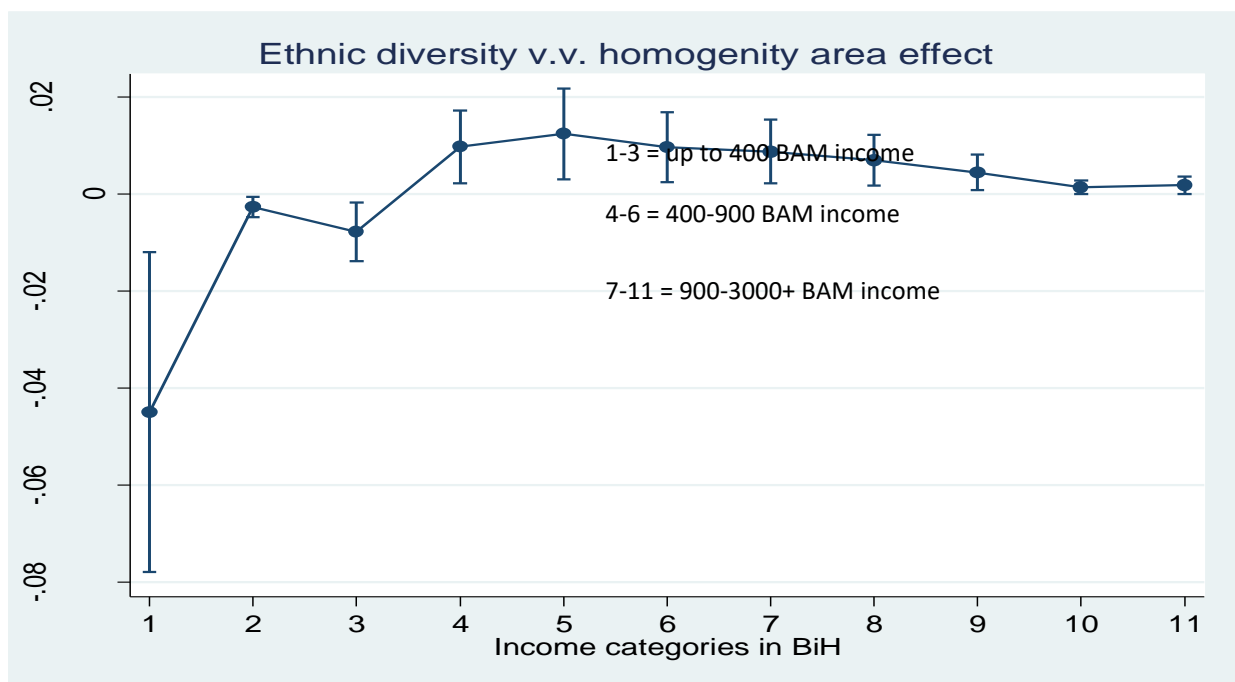


The main message is that the pro-social activity of citizens was systematically identified throughout the whole country, but not only in the flooded areas. Such wide scale response does

not have any systematic pattern and it did not follow different ethnic compositions related to the level of responses. This means that the support was given to others no matter what was their ethnic background. The empirical study that followed by Efendic (2020) was based on endogenous structural econometric models all of which report that the ethnic diversity of personal contact networks was a relevant determinant of greater engagement of BiH citizens in these pro-social activities. There is a clear indication that interethnic networking of individuals had a positive effect on social capital outcomes or pro-social behaviour on the ground, even in the areas where the conflict has an ethnic background. In this vein, Efendic (2020) concludes that enhancing interethnic relations in this post-conflict society is an investment into social capital that can be utilized when it is most needed.

The third complementary ethnic diversity study is based on BiH representative cross-sectional survey data gathered in 2012 with the aim to investigate the effect of ethnic diversity on individual and household incomes. Apparently, this is an individual level analysis and it includes two measures in the investigation, these are municipal ethnic diversity and diversity at the neighbourhood level. The empirical strategy was to estimate endogenous and exogenous earnings functions based on the Mincer's theoretical foundation. The outcomes of this investigation report that ethnic diversity within neighbourhoods – where it is still there – is not an economic disadvantage but is associated with positive outcomes for individuals and families. More precisely said, there is a lower probability of being in the lowest income categories and higher probabilities of being in medium and higher income categories (Figure 3). Put it simply, individuals living in more diverse areas have gains for having higher probabilities of being systematically in higher income categories, suggesting again positive outcomes of ethnic diversity of neighbourhoods, where it is preserved, and the other way around.

Figure 3. Income categories for ethnically diverse v.v. homogenous areas



5. Ethnic diversity and South East Europe – implications and policy recommendations

Bosnia and Herzegovina is a country that witnessed a sudden and structural increase in ethnic homogeneity during the war, including visible policies of ethnic homogenisation in the post-war period. This has caused a huge increase in ethnic homogeneity on the ground, in micro places, with unknown consequences for different socio-economic outcomes. This paper provides a systematic review of three existing studies focused on this country, with the data coming from business and household sectors. Our critical review establishes that ethnic diversity where preserved in BiH is beneficial for businesses, social capital of the society, and family and individual economic welfare. The overall message is that ethnic diversity supports economic prosperity while ethnic homogeneity supports rather economic poverty. The implication is consistent and strong, policies supporting ethnic diversity and inclusion are welfare enhancing.

The rest of the Western Balkans and likely closer countries from South East Europe (e.g. Croatia and Slovenia), also could be observed from this perspective. In particular, Western Balkans countries as Serbia, North Macedonia and Kosovo, which are also post-conflict societies, are very likely to have gone through changes in ethnic diversity on the ground in their micro-places, with similar effects as in Bosnia and Herzegovina. This remains unexplored and deserves further investigation, although messages from BiH are likely to be relevant for these Western Balkans societies.

When it comes to broader South East Europa, in particular to neighbouring countries that were part of former Yugoslavia, as Croatia and Slovenia, we can again say some intuitive recommendations. Firstly, it is likely that the war in Croatia also produced similar trends with ethnic composition on the ground as it was in BiH. In this vein, ethnic diversity where reduced might impose some negative effects on this economy and society. Secondly, Slovenia is probably the only former Yugoslav country with different changes in this respect. On one side, the war in Slovenia was short and did not involve ethnic cleansing as in other places, and in particular as in BiH. Moreover, this country was less ethnically diverse prior to the 1900's wars, and it is one of the rare countries where the population size increased compare to the pre-war census, and primarily due to immigration, with a slight decrease of domestic population. Such change actually suggests an increase in ethnic diversity of this country. Put it simply, while all other former Yugoslav countries seem to gone through increased ethnic homogeneity, Slovenia is the only country with trends going in the direction of increased ethnic diversity. A tentative conclusion, which certainly deserves deeper investigation, is that Slovenian faster economic prosperity and faster integration into the EU was partly linked to the more diversified population that is likely to produce better socio-economic outcomes. Apparently, other Western Balkans countries might learn from the example of Slovenia, as they are also likely to face immigration in the future, due to negative trends in their demographics, permanently high emigrations and already evident need for import of the foreign labour force. All of this will increase ethnic diversity of these societies, but eventually, support also better socio-economic outcomes.

6. Conclusion

This paper provides insights into the effect of ethnic diversity on economic outcomes by critically examining conventional and alternative theoretical perspectives, as well as competing empirical finding of the existing literature. The research focus was on the primary data and empirical studies that concentrate on the post-conflict Bosnia and Herzegovina, a country that witnessed structural brake in its ethnic composition due to the consequences of the Bosnia war (1992-1995).

The war changed ethnic composition practically overnight, and had increased ethnic homogeneity of micro-places, although this country was ethnically heterogeneous for centuries. With such development, this country provides fertile ground for unique analysis which should help us to identify if the change towards ethnic homogeneity has pro-poverty or pro-prosperity nature. To remind, the existing literature focuses on previously ethnically homogeneous areas that are more diversified with immigrants inflow, while we look quite the opposite development, reduction in diversity.

We have critically evaluated the outcomes of three empirical studies, all of which indicate a positive role of ethnic diversity in BiH economy and society, although being implemented with three different levels of analysis, three different methodologies and ethnic diversity measures. Such a consensual finding is rarely found in the existing literature. The overall finding is that in BiH, ethnic diversity, where preserved, is not a threat, but an important resource for entrepreneurial business growth intentions, pro-social activities of general public, and individual and family economic performance. These consensual findings send a powerful policy message that ethnically more diverse areas in BiH are stronger economically and they are likely to prosper faster in the future. As a consequence, policies designed to encourage and support ethnic inclusion in otherwise homogeneous areas, have the potential to be welfare enhancing.

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EMPIRICAL EVIDENCE ON THE REAL MONEY DEMAND DETERMINANTS AND ITS STABILITY IN NORTH MACEDONIA

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Abstract

The aim of this study is to empirically examine the determinants that have influence on the real money demand and its stability in case of North Macedonia. The used data are analyzed quarterly, over the period 1997 (q1) to 2020 (q4). The research method consists of time series econometric techniques, using Cointegration analysis (Trace and the Maximum Eigenvalue statistics) for checking long and short - term and Vector Error Correction Method (VECM). The estimation results show that there is one Cointegration equations among the five variables. The ECT_{t-1} carries a negative sign which confirms the long-run relationship in the Cointegration analysis. The long-run coefficient indicate that all the selected variables have an impact on the real money demand. Specifically, interest rate on deposit in denar and exchange rate have a negative impact on the real money demand, while real industrial production and the increased consumer price index have a positive impact on the real money demand. The short-run results of our VECM model shows that the second lagged of real money demand, the second and the third lagged of real industrial production, the second and the third lagged of consumer price index had a significant impact on the current real money demand. Moreover, the results also show that the real money demand function had remained persistent stable throughout the analyzed period in case of North Macedonia, but again we must be cautious that the time series data used in our study is not that long.

Keywords: Real Money Demand, Cointegration analysis, Vector Error Correction Model, Determinants, Stability, North Macedonia.

JEL E41 Demand for Money

1. Introduction

North Macedonia economy faced challenges in the last years due to economic growth and maintenance of macroeconomic balances. Additionally, negative developments in the global area are reflected in added uncertainties in the North Macedonian economy. Moreover, higher food, fuel and primary commodity prices are translated into stronger foreign inflationary pressures, expansion of trade deficit and potentially weaker domestic demand as a result of negative effects on North Macedonian households' financial balances.

Therefore, starting from this point monetary policy makers should be careful in implementing the current regimen of monetary targeting. The demand for money is one of the topical issues that have attracted the most attention in the literature, both in developed and developing countries. Sustainability of money demand is one of the essential factors on which it is based the choice of monetary regimen. The Central Bank's monetary policy and goals are often depending on its thoughtful and stability of money demand, a stable demand function of money means that the quantity of money is predictably related to a small set of key variables linking money to the real sector of the economy (Judd & Scadding, 1982). However, when the demand for money is not stable (real and nominal interest rates will change) there will be economic fluctuations. North Macedonia as a small but yet open economy, has a relatively high degree of euroization and in transition with partial euroization, the theory suggests that the real money demand is determined by: output, reflecting economic activity; the interest rate, as the opportunity cost of holding money; and the expected change of exchange rate, as the opportunity cost of holding domestic currency (Handa 2000), and hence it influences the euroization. Therefore, many empirical studies are dedicated to investigate what are the crucial determinants of the money demand function, and to observe if it is stable in long and short run. Most studies use gross domestic product, gross national disposable income, consumption expenditure and industrial production, as a proxy for output to measure the economic activity, and consumer prices as a conventional measure of prices in the economy, opportunity costs of holding money and many other variables.

Our empirical literature review focuses on Central and Southeast Europe (including Republic of North Macedonia as well) based on the reason, that it would be more useful in background of our research. More of these studies are country specific studies not panel studies. According to Skrabac and Plazibat (2009), real money demand function is analyzed within multivariate time-series framework, empirical results provide the evidence that real industrial production and exchange rate explains the most variations of money demand in the long-run, while interest rate is significant only in short-run. Golinelli and Rovelli (2002) analyzed the effect of interest rate used as the transmission mechanism tool on the inflation and money demand in the Czech Republic, Poland and Hungary, and measured the effect of interest rates in the real money demand and prices in the domestic market for the period 1991- 2000. The result provides that interest rates and exchange rate were found to be significant and the stability tests showed that the early stage of transition had been marked by the instable money demand while its stability would be achieved at a later stage.

Maravić and Palić (2005) analyze the long and short-term money demand in Serbia for the period January 1996 to March 2005, the Cointegration analysis shows that there is a strong Cointegration relationship between real money, overall economic activity, inflation and interest rate on deposits in denar. Short-term model (ECM) proved that the most important determinant of real money demand is inflation and exchange rate. The analysis has proved that the interest rate on deposits in denar, is statistically insignificant determinant and does not have significant role in money demand. The results of the empirical analysis suggest that the demand for money in the whole analyzed period is unstable. Kjosevski (2013) analyze the long and short-run determinants, and stability of money demand in case of the Republic of Macedonia using monthly data from January 2005 to October 2012. Empirical results provide the evidence that exchange rate and interest rate had impact on money demand in the long-run, while interest rate is significant only in short-run and the result also shows that money demand is stable.

2. Data and Methodology Approach

In order to investigate the macro-determinants of money demand relationship in North Macedonia, we based on the model of Skrabac and Tomic-Plazibat (2009), and selected variables as following:

- ✓ Real money demand ($RM1 = M1/CPI$);
- ✓ Real industrial production adjusted with producer price index, as a proxy of real output (RIP);
- ✓ interest rate on deposits in denar (IRD);
- ✓ exchange rate of denar per euro (ER);
- ✓ consumer price index (CPI).

We used quarterly data from q1-1997 to q4-2020 according to the official reports of the National Bank of the Republic of North Macedonia. All the data are transformed into natural logarithms (denoted Ln), except the interest rate, which is defined as $[(1 + \text{interest rate}/100) * 100]$ ¹⁵. The VECM approach provides a framework for the empirical investigation determinants that have influence on the real money demand and its stability. Namely, it enables an investigation of short- and long-run effects. The methodology proceeds through the following stages:

- first, testing each variable in the model for stationarity;
- second, specifying the VECM, which means determining the lag order of the underlying VAR, testing for Cointegration and the Cointegrating rank, and imposing restrictions on the Cointegrating vector(s) and short-run parameters in the model;
- third, checking the model by diagnostic tests; four, interpreting results from the estimated model.

3. Empirical results

Empirical results of the tests are presented in this section. Before proceeding to Cointegration analysis, as first we need to check the order of integration of the variables. In order to determine the order of integration, the Augmented Dickey-Fuller (ADF) is applied to the levels and the first differences. According to the results of Augmented Dickey-Fuller (ADF) test presented in Table 1, all the variables are non-stationary at levels but stationary in the first difference since the t-statistics are greater than the critical value of t-statistic at 5% level of signification at levels but the t-statistics are less than the critical value of t-statistic at 5% level of signification in the first difference.

Table 1. Augment Dickey-Fuller Unit Root Test results

Variables		at Level		at First Difference		Conclusion Order of integration
		t-statistic	t-statistic at 5%	t-statistic	t-statistic at 5%	
LnRM1	Constant	0.242	-2.899	-4.021	-2.900	I(1)
	Constant and trend	-2.234	-3.461	-4.013	-3.462	I(1)
IRD	Constant	-1.078	-2.902	-5.476	-2.903	I(1)
	Constant and trend	-1.778	-3.465	-5.412	-3.466	I(1)
LnRIP	Constant	-1.509	-2.908	-3.519	-2.909	I(1)
	Constant and trend	-2.862	-3.473	-3.961	-3.473	I(1)

¹⁵ Hence, parameters on the logged levels measure constant elasticities and the parameters on the interest rate will show percentage changes of the dependent variable in response to a percentage point change in interest rates.

<i>LnER</i>	<i>Constant</i>	-1.092	-2.899	-6.580	-2.900	<i>I(1)</i>
	<i>Constant and trend</i>	-2.739	-3.461	-6.542	-3.462	<i>I(1)</i>
<i>LnCPI</i>	<i>Constant</i>	-1.168	-2.899	-4.102	-2.900	<i>I(1)</i>
	<i>Constant and trend</i>	-2.423	-3.461	-4.245	-3.462	<i>I(1)</i>

Source: Researcher's calculation

After assuring that all the variables are stationary in the first difference, $I(1)$ we performed a VAR Lag order selection process. Table 2 reports the lag order selection criteria's statistics. The lag length of the model is selected based on modified LR test statistics (LR), Final Prediction Error criteria (FPE), Akaike's information criteria (AIC), the Hannan and Quinn information criteria (HQIC) and the Swartz-Bayesian information criteria (SBIC). According to the three out of five criteria, specifically LR, FPE and AIC suggest to set the lag length at 4, so for our model the lag length is chosen to be 4.

Table 2: Lag Order Selection Criteria's

<i>Lag</i>	<i>LL</i>	<i>LR</i>	<i>df</i>	<i>p</i>	<i>FPE</i>	<i>AIC</i>	<i>HQIC</i>	<i>SBIC</i>
0	403.016				2.5e-11	-10.2055	-10.1451	-10.0545
1	816.047	826.06	25	0.000	1.2e-15	-20.1551	-19.7922	-19.2486*
2	857.232	82.369	25	0.000	8.1e-11	-20.57	-19.9048	-18.9083
3	903.93	93.397	25	0.000	4.7e-16	-21.1264	-20.1588*	-18.7093
4	940.02	72.179*	25	0.000	3.7e-16*	-21.4108*	-20.1408	-18.2383

Source: Researcher's calculation

Note: * indicates the optimal lag

Before we estimate the VECM, preliminary we should test for the existence of Cointegration among the real money demand (RM1), real industrial production (RIP), exchange rate of denar per euro (ER), interest rate on deposit in denar (IRD) and consumer price index (CPI) or in other words we should test the Cointegration rank using the methodology by Johansen (1988).

The results of the Johansen Cointegration rank tests are presented in Table 3. The Cointegration rank is tested using the Trace and the Maximum Eigenvalue statistics. According to the results both Trace statistic and Maximum Eigenvalue statistics suggest that there is one Cointegration equation (vector) among the five variables at 5% level of significance. This also implies that a long run relation can be found among real money demand (RM1), real industrial production (RIP), exchange rate of denar per euro (ER), interest rate on deposit in denar (IRD) and consumer price index (CPI).

Table 3: Johansen Cointegration tests

<i>Maximum Rank</i>	<i>Trace statistic</i>	<i>0.05 Critical Value</i>	<i>Max-Eigen statistic</i>	<i>0.05 Critical Value</i>
<i>None</i>	81.7998*	68.52	41.8890*	33.46
<i>At most 1</i>	39.9108	47.21	21.9973	27.07
<i>At most 2</i>	17.9135	29.68	12.9117	20.07
<i>At most 3</i>	5.0018	15.41	4.9796	14.07
<i>At most 4</i>	0.0222	3.76	0.0222	3.76

Source: Researcher's calculation

Note: * indicates the rejection of the null hypothesis at 5% level. Trace statistic and Max-eigenvalue test indicates one cointegrating vectors

Further on, based on the results of the lag selection criteria's statistics and the Johansen Cointegration test we chose one rank and four lags to obtain the estimation of Cointegrating relationships through a Vector Error Correction model (VECM). To estimate the long-run coefficients of real money demand and its determinants, we must normalize one variable in the Cointegrating vector. Even from the above results we discovered that we have one Cointegration equations (vector), it is a common practice to normalize the variable of interest, which in this case is LnRM1.

Table 4: Cointegration analysis with normalization

Variables	Coefficient	Standard Error	t- statistic	p-value
LnRM1	1	-	-	-
IRD	0.1096907	0.0207785	5.28	0.000
LnRIP	-2.249412	0.5132956	-4.38	0.000
LnER	83.89734	23.26541	3.61	0.000
LnCPI	-4.122975	0.7826426	-5.27	0.000
C	-322.3076	-	-	-

Source: Researcher's calculation

The long-run coefficient indicate that all the selected variables have an impact on the real money demand. Specifically, interest rate on deposit in denar and exchange rate have a negative impact on the real money demand, while real industrial production and consumer price index have a positive impact on the real money demand.

If the interest rate on deposit in denar increases by 1%, the population will be encouraged to save more and reduce the real money demand by 10.96%.¹⁶ If real industrial production increases by 1%, the real money demand will get increased by 2.25%. If exchange rates increase by 1% the real money demand will decrease by 83.89%. If consumer price index increases by 1%, the real money demand will increase by 4.13%.

In Table 5 are presented the results of short-run coefficients of the Vector Error Correction (VECM) Estimates. The short run results of our VECM model shows that the second lagged of real money demand, the second and the third lagged of real industrial production, the second and the third lagged of consumer price index had a significant impact on the current real money demand at 5% and 10% level.

If the previous real money demand increased by 1% the current real money demand will decrease by 0.23%. If the second lagged of real industrial production increases by 1% the current real money demand will decrease by 0.004%. If the third lagged of real industrial production increases by 1% the current real money demand will decrease by 0.14%. If the second lagged of consumer price index increases by 1% the current real money demand will increase by 1.09%. And if the third lagged of consumer price index increases by 1% the current real money demand will decrease by 1.42%.

Table 5: Vector Error Correction Model Estimates

Variables	Coefficient	Standard Error	z- statistic	p-value
D(LnRM1(-1))	-0.1989641	0.125658	-1.58	0.113
D(LnRM1(-2))	-0.2281812	0.123332	-1.85	0.064

¹⁶ For this variable (IRD) we are dealing with a form of the log-linear model, so $100 \times \beta$ (100×0.1096) is the expected percentage change in Y for a unit increase in X.

D(LnRM1(-3))	0.0230211	0.1311419	0.18	0.861
D(IRD(-1))	0.0000776	0.0098039	0.01	0.994
D(IRD(-2))	-0.0042569	0.0120563	-0.35	0.724
D(IRD(-3))	0.0063833	0.0077756	0.82	0.412
D(LnRIP(-1))	-0.1558477	0.1022186	-1.52	0.127
D(LnRIP(-2))	-0.1453425	0.0834447	-1.74	0.082
D(LnRIP(-3))	-0.1414294	0.068506	-2.06	0.039
D(LnER(-1))	-6.522527	5.698192	-1.14	0.252
D(LnER(-2))	6.891624	5.797569	1.19	0.235
D(LnER(-3))	4.8255715	5.583161	0.86	0.387
D(LnCPI(-1))	-0.177888	0.6288702	-0.28	0.777
D(LnCPI(-2))	1.092087	0.6135316	1.78	0.075
D(LnCPI(-3))	-1.417346	0.621959	-2.28	0.023
ECT(-1)	-0.0623992	0.0361132	-1.73	0.084
C	0.0396639	0.0094869	4.18	0.000
$R^2 = 0.5691$				

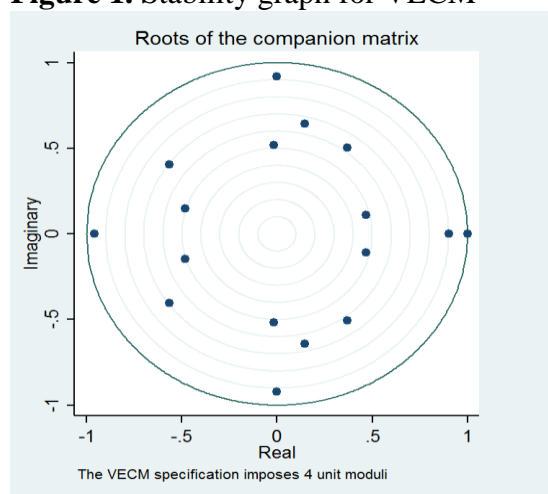
Source: Researcher's calculation

As expected, the ECT_{t-1} carries a negative sign and is significant at 10% level which confirms the long-run relationship in the Cointegration analysis. The value of the ECT_{t-1} indicates the speed of adjustment to the long-run equilibrium. From the results obtained in Table 5, the speed of adjustment in our case is about 6.24%, which means that approximately 6.24% of the disequilibrium from the previous year's shocks converge back to the long-run equilibrium and is corrected in the current year.

Our VECM has a R-Squared of 0.569, meaning that the natural logarithm of real industrial production, interest rate on deposit in denar, the natural logarithm of exchange rate of denar per euro and natural logarithm of inflation can explain up to 56.91% movement of the natural logarithm of the real money demand.

In order to fully ascertain the stability of the long-run real money demand function, the Eigenvalue stability condition is performed. The results showed that the real money demand had persisted stable since all the roots lie inside the unite circle.

Figure 1. Stability graph for VECM



Source: Author's illustration

The model is also checked for serial correlation and normality. To accomplish this, we used the LM test for autocorrelation and the Jarque-Bera test for normality. The results are presented in Table 6 and Table 7. According to the LM test results presented in Table 6, the p-value of all the variables is greater than 0.05, so the null hypotheses in not rejected at 5% significant level of confidence, meaning that there is no serial correlation in our model.

Table 6: LM test results

lag	Chi squared	df	Prob. > Chi squared
1	32.3148	25	0.14910
2	36.1953	25	0.06869
3	16.6733	25	0.89330
4	24.7055	25	0.47897

Source: Researcher's calculation

Further on, according to the results of the Jarque-Bera test results in Table 7 the p-value of the residuals of our depended variable (LnRM1) is greater than 0.05, so the null hypotheses in not rejected at 5% significant level of confidence, meaning that our model is normally distributed.

Table 7: Jarque-Bera test results

	Chi squared	df	Prob. > Chi squared
D(LnRM1)	0.567	2	0.75323

Source: Author's calculation

4. Summary with Conclusions

North Macedonia economy faced challenges in the last year's regards economic growth and maintenance of macroeconomic balances. Additionally, negative developments in the global area are reflected in added uncertainties in the North Macedonian economy. Moreover, higher food, fuel and primary commodity prices are translated into stronger foreign inflationary pressures, expansion of trade deficit and, potentially, weaker domestic demand as a result of negative effects a North Macedonian households' financial balances. Therefore, starting from this point monetary policy makers should be careful in implementing the current regime of monetary targeting. Sustainability of money demand is one of the essential factors on which it is based the choice of monetary regime.

Results provide that in the case of North Macedonia the real money demand had persisted stable throughout the analyzed period (1997-2020), we have estimated both short-and long-run money demand function, and results provide the evidence that the long-run coefficient show that all the selected variables have an impact on the real money demand. Specifically, interest rate on deposit in denar and exchange rate have a negative impact on the real money demand, while real industrial production and consumer price index increases have a positive impact on the real money demand.

The short run results of our VECM model shows that the second lagged of real money demand, the second and the third lagged of real industrial production, the second and the third lagged of consumer price index had a significant impact on the current real money demand at 5% and 10% level.

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EFFICIENCY GAINS FROM MERGERS AND ACQUISITIONS IN THE BANKING SECTOR: EMPIRICAL EVIDENCE FROM CROATIA

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Abstract

This two-stage study's main objective is to evaluate the impact the M&A transactions had on banks' efficiencies in Croatia. In the first stage, the Banker, Charnes and Cooper (BCC) window technique model of Data Envelopment Analysis (DEA) is implemented to assess the relative efficiency of the whole Croatian banking sector in the period from 2011 to 2020. In the second stage, the impact and efficiency gains or losses from a few case studies of merger and acquisition (M&A) transactions that occurred in the observed period in the Croatian banking sector are analysed in more detail. The sample incorporates 20 commercial banks actively operating in the Croatian market in the observed period of ten consecutive years. The BCC output-oriented window DEA model employs two inputs (interest expenses and non-interest expenses) and two output variables (interest revenues and non-interest revenues). The obtained results reveal new insights in the field of M&A and indicate that the observed M&A transactions in Croatia's banking sector have increased merged banks' efficiency. Moreover, the consolidation of the Croatian banking sector has increased the relative efficiency of the whole banking sector except for the last analysed year 2020, which has more to do with the ongoing COVID-19 pandemic than with banks' efficiency. The research field of the impact and effects of M&A in banking is one of the most controversial fields with very inconsistent findings. Such research for a developing South-eastern European country would give new insights and valuable feedback for potential bank investors, bank management, M&A analysts, academic members and regulatory and government bodies. Moreover, another goal of this study is to present the DEA methodology and its dynamic window technique, together with their strengths and limitations and their less known application in the evaluation of banking M&A transactions. This study provides a great scientific contribution since it represents the first study analysing the impact of banks' M&A on bank efficiency in Croatia with the application of DEA in the past decade.

Keywords: DEA, data envelopment analysis, banking sector, bank efficiency, mergers and acquisitions, Croatia, window analysis

JEL classification: G21, G34, N24.

THE RELATIONSHIP BETWEEN INTELLECTUAL CAPITAL AND FINANCIAL PERFORMANCE: EVIDENCE FROM CROATIA

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Abstract

For majority of private sector companies one of the leading goals is profit maximization. Combination of material, financial and particularly human resources is crucial for achieving this goal. Hence, while focusing on profit maximization, it is important to take into account intellectual capital of a company. Intellectual capital includes human capital, structural capital and relational capital. Human capital mostly refers to the collective knowledge, skills and competencies of employees, while structural capital stands for infrastructural support for human capital which remains in the company even if employees leave. Relational capital includes relationships and knowledge exchange within the company, but also between company and its environment, mostly its customers. As such, intellectual capital can represent a valuable source of competitiveness and in such a way contribute to financial performance of a company. Considering the importance and benefits of intellectual capital, the main objective of this study is to determine the correlation between and effects of intellectual capital on financial performance of a company. Based on literature review the main research hypotheses of this study are that there is positive correlation between intellectual capital and financial performance and that intellectual capital positively affects the financial performance of a company. Defined research hypotheses will be tested on a sample of Croatian companies. The data set for this study includes data for population of non-financial Croatian companies for the period from 2002 till 2020. Intellectual capital will be measured with MVAIC model. Data will be analysed using descriptive statistics and regression analysis. Based on obtained results conclusion about the effect of intellectual capital on financial performance will be made. The main contribution of this paper will be in determining the correlation between and effects of intellectual capital on financial performance for Croatian companies. Despite the focus of research on Croatian companies, this study would be of interest also for other countries, especially for the ones from central and south-eastern Europe.

Keywords: intellectual capital, financial performance, Croatia

JEL classification: O34, M20

SOCIAL ORIENTATION AND ORGANIZATIONAL CULTURE OF HIGHER EDUCATION INSTITUTIONS IN CROATIA: RESULTS OF PRELIMINARY RESEARCH

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Abstract

In this paper, we look at the social orientation of higher education institutions, in terms of its relationship to the organizational culture. We define the social orientation of a higher education institution in terms of its efforts to promote human rights, social equality and reduction of poverty, both within the institution, as well as by communicating to the external environment. This effort has been empirically evaluated by students, who were also asked to evaluate the institution's organizational culture, by using the Cameron and Quinn's OCAI framework. In this way, students' perceptions of their school's social orientation are matched to their perception of its organizational culture. The empirical research is based on an online survey, administered at Faculty of Economics, Business and Tourism Split and Marko Marulić Polytechnic in Knin, with 108 students responding to the survey. Statistical analysis of the survey answers leads to the conclusions on how the student body interprets the interpersonal relationships and processes within the higher education institutions and links them to the socially responsible functioning of the institution.

THE STATE OF DIGITALIZATION IN THE WOOD PROCESSING INDUSTRY OF HERZEGOVINA

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Abstract

Information technology's constant and rapid development affects all industrial branches, including the wood processing industry. This paper presents an analysis of the state of digitalization of enterprises in the wood processing sector in Herzegovina. Research data is collected through questionnaires and interviews.

The analysis results show that the production process is digitalized by less than 20%. At the same time, the total digitalization of the company is slightly higher, around 25%, primarily due to the fact that most of the analyzed companies have digitalized financial and accounting operations and sales, have a website, and are present to some extent on social networks.

Based on the analysis of the state of digitalization, the paper also gives general recommendations for improving digitalization. The main recommendations refer to the fact that the analyzed companies should upgrade their IS in terms of integrating data (from different devices and different programs) and better reporting, further improve the digitalization of the production process, appoint a responsible person for the implementation and monitoring of digitalization, and that a planned approach to digitalization is needed.

Keywords: digitalization, wood processing industry

JEL classification: O33, L73, L86

1. Introduction

In recent years, especially since the COVID-19 crisis, digitalization has become an overused term, unavoidable in all aspects of human life, both business and personal. In the business world, digitalization is an ongoing process that has been going on for decades. In general, digitalization is considered the main driver of changes in the business environment, both in the automation of

production and in the improvement of the overall business, which altogether leads to the Fourth Industrial Revolution (Monostori et al., 2016).

However, there are still ambiguities in the understanding of the concept of digitalization itself. Namely, the terms digitalization and digitization are still often mixed up in both scientific and professional literature and are often used as synonyms. Although at first glance very similar, these terms have different meanings. According to Gartner IT Glossary (Gartner 1, 2022) “Digitization is the process of changing from analog to digital form, also known as digital enablement“. Changed information consists of discrete data units that can be addressed, stored, processed, and managed separately with computing devices (Correynen et al., 2017). On the other hand, “Digitalization is the use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to digital business (Gartner 2, 2022)“. That definition emphasizes the shift from traditional business models to digital platforms, which improves process efficiency, data transparency, and creates more customer value. According to the previous definition, digitalization is a process of continuous change triggered by the growing usage of digital technologies (Hirsch-Kreinsen, 2016). This is why the term digitalization is used in this paper.

The intensive use of digital technologies has caused significant change along the value chain and created a huge strategic potential for companies and organizations that use it.

In manufacturing companies, the main purpose of digitalization is both, horizontal integration through value networks and vertical integration of all company levels (Posada et al., 2015). That integration enables connected and integrated information systems, products, devices, as well as workers, vendors and users (Abramovici et al., 2017). Thanks to digitalization, manufacturing companies can better manage complex industrial processes (Kagermann et al., 2013) and improve efficiency, adaptivity, and automation to ensure continuous growth and competitiveness (Carolis et al., 2017). However, only if digital technologies are implemented within all areas of the company, the company can use all of its advantages (Vial, 2019).

The wood processing industry is considered to be slow in implementing the digitalization process. That industry is still facing challenges related to data fragmentation, poor traceability, and lack of real-time information (Santos et al., 2019). This was exactly the motivation to analyze the state of digitalization of enterprises in the wood processing sector in Herzegovina. Data used in the presented analysis is collected through the project “Boosting competitiveness of wood processing sector in Herzegovina”, which is implemented within the EU4Business project co-financed by the European Union and the Federal Republic of Germany.

The specific objectives of the paper are:

- Analyzing the state of digital/computer equipment and communication channels in selected companies.
- Analyzing the software support in selected companies.
- Analyzing the investment in digitalization in selected companies.
- Analyzing the state of digitalization in selected companies.
- Recommendations for improving digitalization in selected companies.

2. Digitalization in the wood processing industry

The digitalization process naturally leads to the fourth industrial revolution. The term Industry 4.0 is often used as a synonym for the fourth industrial revolution (Lasi et al., 2014). Industry 4.0 is completely changing how companies operate and requires huge investments in digital technologies if companies wish to remain sustainable and competitive. Digitalization as the base of Industry 4.0 focuses on the use of different technologies such as the Internet of Things, Cloud Computing, Artificial Intelligence, Big Data Analytics, Additive Manufacturing, Robotics, Block-chain, and Augmented Reality to generate products and services (Figorilli et al., 2018). All these

technologies, using the Internet and cloud systems, offer a high level of connectivity and integration between people, devices, processes, and different organizations through the value chain.

The research related to digitalization in the wood processing industry mostly refers to process efficiency and cost-competitiveness in the fields of forest mapping and monitoring applications (Bohlin et al., 2017; Siipilehto et al., 2016), harvesting and logistics (Manner et al. 2016), and timber production (Todoroki & Rönqvist 2002). Besides efficiency and cost savings, previous researches also emphasize the need to introduce new business models through collaborative planning of transportation to improve wood fiber flows. Some studies focused on mathematical modeling (Audy et al., 2007; Beaudoin et al., 2007; Carlsson & Rönqvist, 2007; Frisk et al., 2010). Researches related to the use of digital technologies as a tool for the improvement of customer relationships and competitiveness in the wood processing industry are rare. An exception to this is the research made by Lehoux et al. (2014) that analyses the effects of collaboration on the reduction of operational costs and better respond to market demand. However, there is a need for more research regarding digitalization that goes beyond a firm's boundaries and integrates products, business processes, sales channels, and value chains (Matt et al., 2015).

European Union is fully aware of the necessity for digitalization of the wood processing industry. One of the latest EU projects that deal with it is the DIGIT-FUR project. That project is focused on the impacts of digital transformation on the wood furniture industry as well as on the changes caused by Industry 4.0. on the European wood furniture sector in 2025 (Rumignani et al., 2019). The main DIGIT-FUR outcomes are the following (Rumignani et al., 2019):

- The adoption of Industry 4.0 new technologies is one of the key drivers of change during this and the next decades for European industries.
- In the era of a massively connected and globalized economy, the wood furniture manufacturing industry should offer personalized smart products and services based on digital manufacturing systems.
- Digitization poses new challenges for occupational health and safety, but new types of workplaces, processes, and technologies can increase the safety and health of workers. Workers may be removed from hazardous environments, and sensors may facilitate machinery maintenance. However, digitalization gives also rise to many new challenges and stresses for workers.
- Increasing automation can lead to a lack of sufficient understanding of the new processes and technologies. The use of cognitive interactions with robots/cobots can lead to mental stress or the risk of working alone and feeling isolated. Long working hours on computer screens and poor ergonomic design of non-office visual display unit workplaces may lead to musculoskeletal disorders.
- Continuous education will play a key role in supporting workers and managers and provide the newly demanded skills, knowledge, and competencies, such as the seven survival skills of the future and the ones related to digital literacy, data security, engineering, science, technology, and ICT.
- Changes in job tasks will create new needs for skills, knowledge, and competencies. Future employees of the furniture industry will not only have to be able to efficiently perform tasks, but they will have to possess the skills and ability to recognize, adopt and adapt to continuous changes as well. There is no increased need for hard skills, but hard skills or technical skills need a complete integration of all relevant digital skills.

There is little research on digitalization in the wood processing industry in Bosnia and Herzegovina. Some of the latest research is focused on identifying the main problems in the relationship between forestry and wood processing (Džafić, 2021), the use of fundamental

corporate finance principles in the wood industry (Džafić & Polić, 2018), how often the wood industry introduces new products to the market (Ahmetašević & Gostimirović, 2016) or on implementation of EU standards in the wood industry in Bosnia and Herzegovina (Panić et al., 2015).

Research similar to the research presented in this paper, which deals with the state of digitalization in part or the entire wood industry in Bosnia and Herzegovina, was not found.

3. Methodology

Empirical research was conducted between 29.11.2021 and 22.01.2022 in Bosnia and Herzegovina. The sample consisted of 10 companies from the wood cluster „Herzegovina“.

Data was collected by a survey questionnaire that contained questions about computer equipment (hardware), software, networking, the Internet, communication technologies, and (level of) digitalization. After collecting and sorting the data, the results are presented as a number and percentage, mean and standard deviation, median and range.

- *Companies characteristics - sample*

Seven companies were founded before 2000, and three companies after 2000. The mean age of companies was 25 years (SD=4). Distributions of companies according to the number of employees and annual revenue are shown in Table 1.

Table 1.

Number of companies	
Number of employees	
<10	3
10-50	6
>50	1
Annual revenue (KM)	
100,000 - 500,000	3
500,000 - 1,000,000	3
>1,000,000	4

Respondents gave multiple answers to the question related to the primary business activities of the researched companies. Analysis of their answers showed the following: custom furniture production – 6 companies; room (interior) planning/design – 5 companies; the processing of panels (folding, cutting, pressing, CNC processing, etc.) – 4 companies; sale of furniture from other manufacturers – 4 companies; logging – 3 companies; extractions and transport of wood assortments – 3 companies; final production of solid wood panels – 3 companies; production of parquet and underlays for parquet and floors – 1 company; production of briquettes – 1 company.

4. Results

The results were presented following the set of questions contained in the questionnaire.

- *Computer equipment (hardware)*

The result shows that all companies have at least one personal computer (PC), most often between 2 and 4 PCs. The age of the PC ranges between 2 and 10 years, mean age was 6 years (SD=4,1). Nine of ten companies have servers where their database is stored. The age of the servers ranges between 1 and 10 years, the median age was 3 years.

Researched companies also own tablets, printers, scanners, plotters, CNC, and other digitized machines (Figure 1). No company uses IoT devices, robots, or robotic arms.

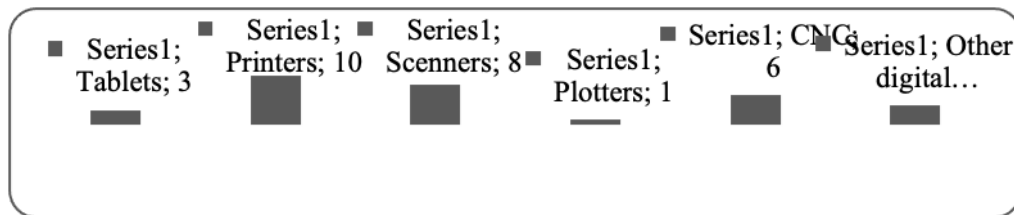


Figure 1. Companies according to the owning IT equipment

- *Software*

Most companies have an information system (IS), more precisely 9 of 10 companies. IS age varies between 1 and 16 years and the mean age is 9 years (SD=5,9). A company that does not have an IS uses a software program for managing goods and material bookkeeping, while their accounting is handled by an external company.

Eight out of nine companies have an ERP-type IS that enables the monitoring of all business processes from accounting, finance to production and the integration of data into a single database. Only two companies track production work orders through their IS and none of the companies use all the capabilities of their IS, especially when it comes to integrating data from different digital and automated devices.

Four of five companies dealing with room/interior planning/design use software for 3D modeling and 3D visualization.

Researched companies do not use business intelligence tools, specific data analytics, augmented reality, virtual reality, virtual worlds, artificial intelligence, or big data technologies.

- *Networking, Internet and communication technologies*

All companies, at least in one of their parts, have access to the Internet. E-mail, mobile phone/telephone, and applications for instant messages (Viber, WhatsApp, Messenger, etc.) are most often used for internal and external communication. Eight of ten companies have an official website with basic information about the business and its products/services. Online shopping on the website is available only for one company.

Also, most companies (8 of them) are present on at least one of the social networks, most often on Facebook and Instagram (Figure 2). Mentioned social networks are most often used to promote companies and their products/services while the use of it for direct communication with customers is significantly less.

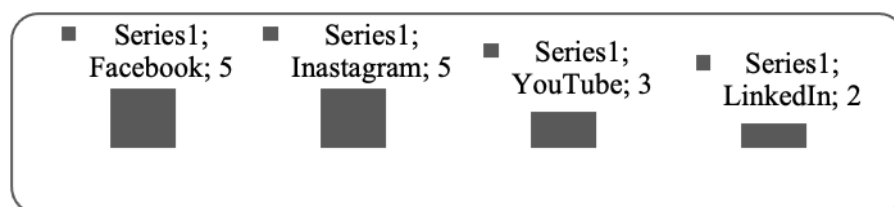


Figure 2. Companies according to the presence on social networks

- *Digitalization*

Not a single company has a separately organized IT department, nor does it have employees exclusively in charge of IT. Not a single company is currently working systematically nor are they planning on digitalization. The above means, more specifically, that no company has no a)

annual digitalization plan, b) annual budget for digitalization, c) annual employee training plans related to digitalization, and d) annual budget for employee training related to digitalization. The results show that half of the companies invest in digitalization (acquisition of computers, digitized machines, robots, IoT, software, employee training, etc.) only as needed, not continuously (Figure 3) while others allocate certain financial resources every year.

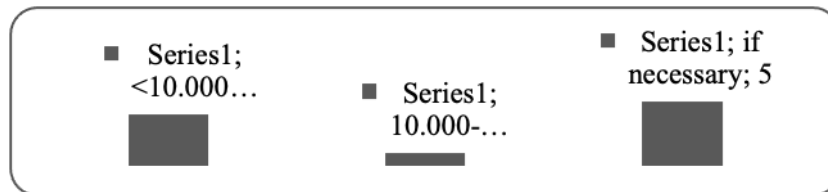


Figure 3. Companies according to the annual investment in digitization

The two companies pointed out that they started the digitalization process before 2017, and the majority started this process after 2020 (Figure 4).

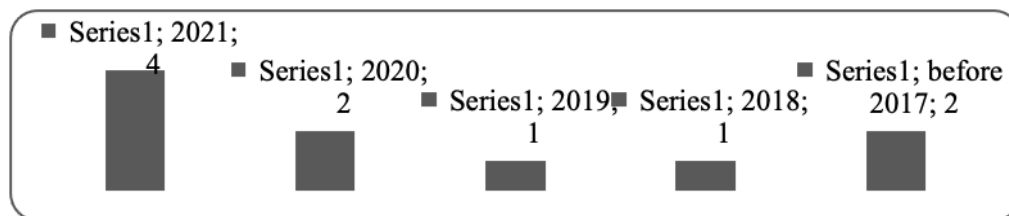


Figure 4. Companies towards the beginning of the digitization process

Companies that have their IS have provided software support for accounting and financial operations to the greatest extent. However, when it comes to production, only one company estimated that its production process is more than 50% digitized (specifically 60%). The situation is similar for the company as a whole, only one company estimated the digitalization of its operations at 80%, while for other companies this estimate ranges from 10-40%. On average, the digitalization of business processes in the investigated companies is less than 25% (Table 2).

Table 2. Percentage of digitalization (self-assessment)

	Production	Finance/accounting	In general
Min	0	10	5
Max	60	80	80
Mean	18	23,5	54,4
St.Dev.	20,8	21,7	19,8
Mode	0	15	60

5. Discussion and recommendations

The results show that the biggest challenge is the digitalization of the production process. This problem is further expressed in companies that are primarily engaged in felling wood, extracting and transporting wood assortments, and final production of solid wood panels (3 companies). The mentioned companies use only mechanical machines. Replacing those mechanical machines with digitized devices for the current volume of work has no economic justification. However, forestry machines, machines and mechanisms used in felling work, are constantly being improved and digitized and, with greater use, it is expected that prices will drop which would make the acquisition of such technology more realistic.

Companies that primarily deal with the production of custom-made furniture and room/interior planning/design mostly use CNC machines in production and 3D modeling software. For these companies, the biggest challenge is connecting data from CNC and other digitized devices as well as data from 3D modeling software with information systems that, as a rule, store data related to financial and accounting operations and sales.

Due to the disconnection of data from different systems their efficiency is reduced and it makes it impossible to monitor work productivity and production costs in real-time which, in turn, leads to a slowdown of the entire process. It should follow that since the data from different systems are not unified, it prevents simple and efficient access to all the information necessary for business monitoring, i.e. quality reporting.

Based on the analysis, recommendations for improving the level of digitization for the analyzed companies can be summarized as follows:

- Upgrade of IS in terms of data integration - it is necessary to ensure the exchange and collection (unification) of data from various digital devices and other programs used by companies,
- Improve the reporting part of information systems and ensure reporting in real-time, using advanced visualization techniques (ensure monitoring of basic business indicators in real-time and on different devices – mobile phones, tablets, etc.),
- Encourage the digitization of the entire business process, especially the production process,
- Appoint the person responsible for conducting and monitoring digitization,
- Be active in the use of social media and enable online sales (via websites and social networks),
- Approach the digitization of the company in a planned way - on an annual level and make a digitization plan and budget for digitization.

6. Conclusion

Although the research was conducted on a small sample, given that there are no researches in BiH that deal with this topic, it has great value. It resulted in recommendations for the analyzed companies, but it can be assumed that they can also be guidelines for other companies from the wood processing industry. The results did not show an enviable level of digitalization so, in comparison with the rest of the world, it could be concluded that the wood processing industry in Bosnia and Herzegovina is significantly lagging. However, it is positive that BiH companies are also following world trends, have embarked on the digitalization process, and strive to improve their operations and processes which shows their awareness of the existing problems and commitment to solving them with the aim of long-term positive competitive business within this sector.

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WIND OF CHANGE: INVESTORS' PROFILE IN THE BULGARIAN WIND ENERGY SECTOR

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Abstract:

Against the background of peaking prices of conventional energy sources, which are often abused as geopolitical instruments, the rising share of renewables in the electricity mix becomes crucial due to its contribution to the energy independence, security and decarbonisation of the economy. The renewables and technologies based on them also facilitate the energy transition towards decentralisation and democratisation of the current electricity system. The instant paper zooms in on wind power generation within the economic context of Bulgaria from 2007 to mid-2022. The latter coincides with the period following the adoption of the domestic Act on Renewable Energy Sources (2007). Based on a sample of 104 companies, which own and operate circa 170 projects for wind power generation across the country, the article attempts to highlight some important characteristics of their investors' profiles. Therefore, the ordinary least squares method is applied in order to estimate the impact of several independent variables on the cumulative amount of the wind power capacity installed in Bulgaria from 2007 to mid-2022. The independent variables are related to the industrial background of the firms that generate electricity from wind energy, their investment and managerial experience as well their ownerships constellations. The paper concludes that statistically significant for the amount of the wind power capacities installed in Bulgaria are both the previous investment experience of the company as well as the presence of a parent company, which secures better access to capital.

THE EMPIRICAL ANALYSIS OF THE EFFICIENCY OF STATE-OWNED ENTERPRISES IN BOSNIA AND HERZEGOVINA: DATA ENVELOPMENT ANALYSIS APPROACH

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Abstract

This paper investigates efficiency of state-owned enterprises (“SOEs”) in Bosnia and Herzegovina (BiH). We find BiH as a good example for this type of analysis taking into account the fact that country economy is dominated by the large presence of SOEs that proved to have strong impact on the overall macroeconomic stability. The main goal of the paper is to identify and compare the efficiency levels with respect to entity, sector, size and ownership (central or local government level). The efficiency analysis relies on secondary data collected and explored through the application of Data Envelopment Analysis (DEA). The study utilizes data for 437 SOEs for the year 2019. After conducting a review of the available literature, we developed BCC and CCR models using two input two output combination. Results of the empirical investigation show significant differences in efficiencies among analysed SOEs based on the previously defined criteria. The efficiency scores obtained from the DEA model could be used as a baseline and help policy makers to identify individual SOEs with poorest performance and accordingly to develop adequate governance strategies with respect to different administrative levels.

Keywords: Efficiency, DEA, SOEs, Public sector, Bosnia and Herzegovina

JEL classification: C67, C80, L32

SOCIAL MEDIA AS A TOOL FOR PUBLIC INSTITUTIONS' MARKETING ENHANCEMENT: THE CASE OF CANTON SARAJEVO MUNICIPALITIES

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Abstract

This paper focuses on understanding the public institutions' use of social media networks and aims to provide answers to three underexplored research questions: Which social media channels are most commonly used by public institutions? Who is responsible for social media and what level of social media competence exists in public institutions? Which form of social media guidelines do public institutions have for employees? Most of the studies relevant to public sector marketing date back to the 90s or early 2000s, while recent literature covers the case of OECD and other developed countries. This study is focused on the case of social media usage in Canton Sarajevo municipalities, therefore, contributing to the existing literature by adding contemporary findings applicable to public institutions in Western Balkan countries. Research insights are based on high-quality data collected through semi-structured in-depth interviews with government officials responsible for the management of public relations offices in nine Canton Sarajevo municipalities and the Sarajevo City Administration. Our findings reveal that Facebook is the most frequently used social media network among institutions included in the study due to its global and local popularity, in addition to useful features, such as the possibility to share a significant amount of text and a variety of content. Moreover, the role of social media among Canton Sarajevo municipalities is mainly informative. Nonetheless, the majority of institutions made progress towards establishing a successful two-way communication with citizens, although they still need to work towards utilising the full capacity and the possibilities offered by social media, in a way that is more involving and useful for the citizens. While PR departments appear to play the key role when it comes to social media management in Canton Sarajevo municipalities, none of the respondents interviewed reported having any written strategy or guidelines concerning institutional usage of social media, employees' roles, budget, guidelines for private and professional use of social networks, the evaluation of results and reporting etc. Based on the findings, implications for both researchers and practitioners are discussed, and recommendations for future research are provided.

Keywords: social media, public sector, public relations, guidelines, government
JEL classification: M38

ADVERTISING ON SOCIAL NETWORKS: OPINIONS OF GENERATION Z

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Abstract

This paper includes research that determined is there a different opinion about social media advertising between different generations. The main purpose of this paper was to determine what affects the decision-making process when it comes to social media advertising with generation Z, to introduce theoretical aspects of social media advertising. Gen Z is know for being with their „mobile phone in hand“, which suggest that this is a digital generation (unlike previous Gen's) grown up with technology and in a social networks enviroment. The aim was to determine generation Z opinion about social media marketing. The research was conducted using an originally created survey with a sample of 102 participants from Croatia. The results have shown Generation Z considers social media advertising intrusive and companies should get more creative in the future.

Keywords: digital marketing, online advertising, generation Z, social networks, advertising on social networks

JEL classification: M31, M37.

1. Introduction

The aim of this paper is to determine the opinions of Generation Z about social media ads and to show their progress in comparition to previous generations. Also, this paper aims to display first digital generation and how advertising is impacting their lifestyles and interests. It is also crucial to emphasise how the future of marketing is impacting advertising bussiness and in which way are social networks are also influencing this question.

Project provides answers to many questions, such as:

- Which ads are most distracting for youngest?

- Which social network is preferable according to Gen Z?
- What amount of time do they spend on social networks?

Advertising on social networks is a new step in the advertisement industry, useful to companies because of much easier tracking of their target group. Various platforms have different aspects of their advertising plan for social networks and different things to look up on while planning advertisement project. Advertising on social networks is one of approaches which a company can use to expand their business and empower their brand, create communication with existing and attract new users on social networks. The world today is growingly digitalized and impossible to not acknowledge the importance and influence of social networks (Castells, 2000; Grbavac, 2014). As social networks are becoming more popular, they are growing their user community which consists of users from different generations including Generation Z, the ones who grew up with social networks and represents the biggest part of user community.

This paper consists of five chapters, including Introduction and Conclusion. The theoretical part of paper gives an introduction to advertising, the components of Internet advertising, the role of social networks in advertising and who are Generation Z and the ways advertising is impacting them. In third chapter is explained methodology of research. Further chapter consists of research about stances of Generation Z on social networks advertising. Every question from survey has been analysed and conclusion has been shown from the statistic data. In the last chapter there has been shown conclusions based on research about stances of Generation Z in advertising.

2. Theoretical review

2.1. Advertising

The term „advertising“ comes from the latin expression for advert, *reclamo (lat.)*, which stands for public advertising. Advertising is a way of communication which aims to inform their potential customers about various products and services (The Economic Times, 2022). In this day, most used for advertising are massmedia channels like television, newspapers, radio, Internet, magazines, posters and else (Keller, 2002).

Advertising content is placed on positions with great concentration of people, where the possibility for seeing the ad is much wider (Ferenčić, 2012). Advertising for promotion is used by various political parties, non-profit organizations, different companies who want to create their brand and to highlight their position in mass (Kotler, 2000). Today the ads are likely to be found as recommendation based on users' previous search. Ads are visible on web site during the time agreed in contract (Biloš, Ružić, Turkalj, 2002).

Scientific disciplines in advertising for several decades have seen the problem of linguistic definition the use of certain terms that enter the field of advertising expression. In the field of advertising expression mostly used expressions are: advertisement, advertising, propaganda, economic propaganda, promotion, publicity, public relations, advertising. Economic scientific community has separated meaning of marketing, promotion, public relations and economic propaganda. Over the years, advertising has been defined in a variety of ways.

One of the most common definitions is according to Kotler (2000), which reads: *"Advertising is any paid form of impersonal presentation and promotion of ideas, services or products from an identified sponsor."*

Forms that more closely determine advertising according to Kesić (2003; pp. 236 - 237)

- Paid form of promotion; when certain information and messages of entertaining significance appear in the mass media, and in addition it is not paid for, it is publicity.

On the other hand, advertising is paid form of promotion and it's purpose is to present product and service to wider public with aim of reaching communication, economic or both performance.

- Impersonal presentation; Advertising is not about direct communication, as is the case with personal sales, but communication takes place through the mass media to a large number of unknown recipients.
- Ideas, products and services; from the definition can be seen that advertising has took interest for much larger aspect than solely promoting the product. In the space of contemporary advertisment much larger share is on advertising services, banks, insurance bureaus, airline companies and else, than in product advertising. Political advertising, institutional advertising, etc. have an increasingly important place.
- Known sender of the message; this feature separates advertising from some other forms of marketing communication. While communication presents opinion and ideas because of involment on public and opinion making, sender of advertising message is well known and can be indentified, or that information is explicitly stated within the advertising campaign itself

2.2. Internet Advertising

When the advertising on Internet appeared, entrepreneurs got another easier opportunity for advertising and targeting the target audience as precisely as possible. Internet is nowadays more used and more superior than before, and this was realized by entrepreneurs, so today the Internet is increasingly used for advertising purposes. Internet is evolving more and more, so as the result Internet advertising has surpassed television advertising (Chaffey, Chadwick, mayer, Johnston, 2009).

Internet offers various types of advertising, such as (Marshall, Todd, 2008, Meida marketing 2014,):

- Banner ads – Most common form of advertising on Internet. Recognizable for visitors of web site by dynamic or static images that display advertising messages for products, services, brands or similar. Banner contains clickable link which redirects users to web site (Varga, 2021).
- Advertising on search engines – advertising has started to evolve in same way as search engines. In that form of advertisement, the keywords that best describe the content must be listed, and the search engines then drop the ad according to the keywords. Pay per click, prices for individual keywords are not the same, but it depends on the popularity of the keyword, also the keyword must be relevant and must have a search volume
- Contextual advertising – form of advertising that provides situation to direct the client's ads to the website with the web content that best suits the tenant advertiser. Good targeting is achieved by choosing phrases or words called keywords that best describe the content.
- Advertising on social networks – form of Internet marketing that includes creation and sharing of content on social networks because of achieveing certain marketing goals. It includes activities such as creating and publishing textual or visual materials and other content for increasing the „engagement“ and activities of paid advertising on social network.
- Advertising networks - works in such a way that the network collects advertising space which is then offered to interested advertisers. They are in intermediary role between medium and advertiser. It is easier for advertisers to rent advertising space through the ad network. The most popular ad network is Google AdSense.

- Video advertising – has important role in positioning brand on market and on customers decisions on buying those brands. Main difference, when compared with classic video ads from past, is that commercials on TV are presented after some viewed content while in online media environment they are coming on start of viewed content and their messages have to be told in first 5 seconds of ad unless the users will skip them (MarketingSherpa, 2015).
Video ads increase conversions by giving consumers an understanding of the products being sold (Čolić, Dunder, 2015).

2.3. Advertising on social networks

Advertising on social networks is strong way of advertising for all companies no matter the size, who want to reach new customers and make their brand or product even stronger (Stanojević, 2011). Great majority of social networks users is involved in interaction with brands on this social networks: Facebook, Pinterest, Twitter, Instagram (Arbona.hr, 2020). Marketing on social networks can greatly contribute to business success, create brand advocates and increase sales (Brajković, 2014). Advertising on social networks includes activities such as creation of textual and visual material and other forms of content in a way to increase „engagement“ and activities of paid advertising.

Before starting the ads campaign on social network, it's crucial to set goals for achieving. Certain issues should be identified in order to achieve the set goals in the end, likewise:

- What do you want to achieve with social media advertising?
- In what way will the target audience be used on social networks?
- What is the location of target audience?
- What message will be sent to target audience through ads campaign?

Advertising on social networks has multiple goals, and some of them can be: to build up conversion, to increase awareness about brand, to create identity and positive association of brand, to improve interaction with target audience, to increase traffic on web site and many others (Biloš, Kelić, 2012). A special place in advertising on social media is influencer marketing (Deges, 2018; Duffett, 2017; Kling, 2017; Mediakix, 2016, Mediakix 2018, Kristy, Lincoln, Pomponi, 2015).

There are certain key concepts of social media advertising, such as:

- Context – more important than the content itself. It can be in form of some comic, funny joke – probably less users will read the whole text but when published on Twitter which has limit of characters per tweet, there's a big probability that large number of users will see that.
- Content: it can be in form of video, photo, short message, post on Facebook. Content comes in different shapes and dimensions regarding the social network that's used at the moment (Markić, Bijakšić, Bevanda, 2016).
- Hashtag – shape/character that is used as meta data in content which is published. It is used to describe theme or to label some kind of trend.
- Engagement - indicates whether users are interacting with content posted by advertisers (Wei, Guo, 2021).

3. Generation Z

Members of the Generation Z are born at the beginning of the XXI century (OECD 2001, Parks, 2013). They don't know anything about life before Internet, their reality is shaped with „virtual reality“ (Adria Media, Zagreb 2020.). Generation Z is using social networks such as Instagram, Snapchat and TikTok for the last two years as platforms for communication, while they

consider the social network Facebook to be the platform of their parents. Members of generation Z are vlogging, creating and following content on YouTube channels where they, without any hesitation, speak about various subjects like clothing, makeup or mental health and environmental protection.“ (Adria Media Zagreb, 2020, Businessinsider, 2015).

For better understanding of the Generation Z, attention should be paid to the following facts stated by Adria Media Zagreb (2020):

- Generation Z is often called Iphone or Selfie generation. Which means they always want to have information in the palm of their hand and available at any time (.
- They are altruistic by nature and are not afraid of work. According to a survey by an American institute (Cho, Bonn & Han, 2018), about 60% of Generation Z members would like to have a job that will make the world a better place, while 30% said they see the purpose of life in volunteering. This is a generation that is not afraid to work and create, all with a dose of meaning.
- Although they are close in age, millennials and Generation Z do not share the same value and belief systems. Generation Z is characterized by a distinct tolerance for the different, more than any generation before.

Members of the generation Z are characterized by creativity, they are very ambitious and curious (Balitao, 2019). For the reason of growing up with technology, they are very well informed in social actualities when compared with past generations, however, there are some negative characteristics that are caused by technologies - such as depression. Members of this generation feel the depression because of presence of the online world, false (self)presentation on social networks and because of all other norms that are imposed over social networks. Because of this and especially in this Covid-19 times, it is necessary to develop mental health awareness.

4. Research methodology

The instrument of this research was a survey questionnaire created via the Google Forms. The survey questionnaire consisted of a total of 15 questions, of which 14 questions were closed-ended with pre-offered answers, while the last question was open where respondents were asked to state their attitude towards advertising. The questionnaire collected data on respondents' attitudes about advertising on social networks. The survey was conducted only on members of Generation Z, in order to make the data as reliable as possible and to prove certain hypotheses. The research was conducted through social networks on a total of 103 respondents in the period from 01.09.2021. - 06.09.2021. The survey questionnaire was originally designed for the purposes of this research. The first question was a qualification one whose goal was to determine whether respondents use social networks. Since one respondent does not use social networks, the sample was reduced to 102 respondents. The survey was completely anonymous, conducted in the Republic of Croatia. The data collected was collected mostly through the social network Facebook.

The sample consists of 56.9% female population and 43.1% male population. The sample itself is dominated by the age of respondents aged 21-23, 56.9%, followed by representatives of the generation aged 24-26, 32.4%. This is followed by respondents aged 18-20, 8.8% of them

Respondents come from various parts of Croatia, and are distributed by counties. The table below shows how many respondents come from which county. It is possible to conclude that most respondents come from the County of Istria, 40 of them which is 50%, followed by Karlovac County with a total of 22 respondents which is 21.57%, and the next county that follows is Zagreb County with a total of 21 respondents, which is 20.59% respondents. Two respondents stated that they come from Zadar County, which amounts to 1.96% of respondents, and Zadar County is followed by the remaining counties with one respondent, which amounts to 0.9% per county (Table 1).

Table 1. Number of respondents by counties

County	Number of respondents
Istrian County	51
Karlovačka County	22
Ličko senjska County	1
Sisačko – moslavačka County	1
Međimurska County	1
Vukovarsko –srijemska County	1
Splitsko – dalmatinska County	1
Zadarska County	2
Zagrebačka Ciunty	21
City of ZAGREB	1

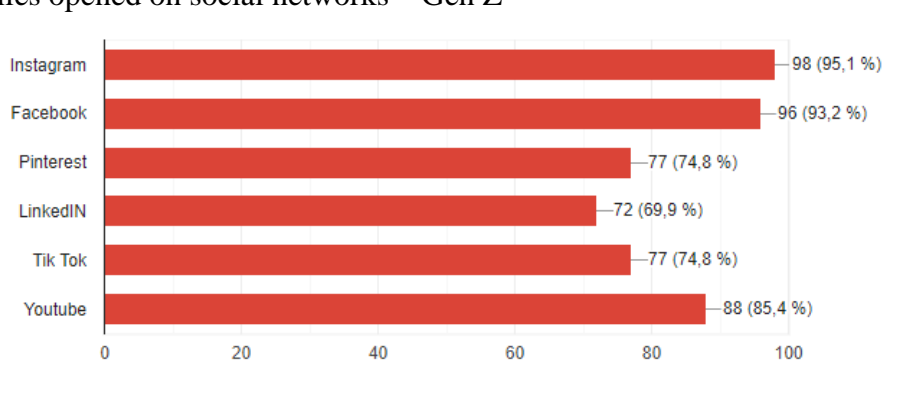
Source: author's contribution

5. Research results

As mentioned earlier, to the first question "Do you use social networks?" 102 respondents answered "Yes" which is 99.99% of the surveyed population, and only one respondent answered "No" which is 0.01% of the respondents population. Table 2 below shows the number of respondents by answers.

The answer to the question: "On which social networks do you have a profile?" was offered in advance, and the respondents could mark more social networks if they have a profile on them. Respondents were also offered the answer "other" so that they could list some more social networks if they use them. Below is Graph 1, which shows that the most surveyed populations of Generation Z prefer the social network Instagram, which is 95.1%, followed by the social network Facebook with a total of 93.2% of the surveyed population of Generation Z, the third place is occupied by social networks YouTube with 85.4% of the surveyed population. It can be noticed that Tik Tok is a relatively young social network that quickly gained popularity among Generation Z, and 74.8% of the surveyed population stated that they use this social network. According to this survey, the surveyed population of Generation Z answered that they have a profile on LinkedIn in the percentage of 69.9%. Members of Generation Z are familiar with all the possibilities provided by this social network and why it is necessary to have a profile on this social network.

Graph 1. Profiles opened on social networks – Gen Z



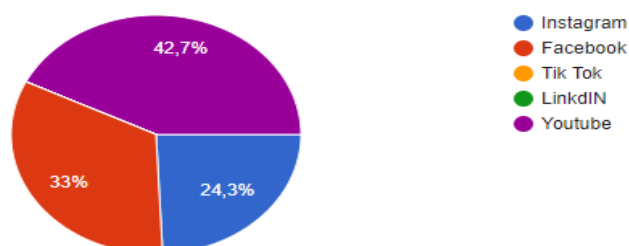
Source: author's contribution

Graph 1 shows which social networks are the most popular among Gen Z

The next question is "For what reason do you use social networks?", The answer to this question was formed "for socializing", "for work or college", and the third option was "Both" and in the end they could give some more reasons were not listed as a possible answer. The surveyed members of Generation Z answered with 61.2% that they own social networks for socializing with friends or family and for work or university obligations. 20.4% of respondents answered that they use social networks only for work, while 14.6% said that they use social networks only for socializing with friends, family or acquaintances. The remaining 1.1% of members of Generation Z stated that they use social networks only for fun, hobbies, inspiration. Generation Z is a generation that is networked and that is moving more and more communication to social networks today. This generation will choose messaging if possible for agreement, over live talks about socializing. This generation is the most educated generation ever and very technologically aware, and the vast majority of information can be found on the Internet, or on social networks. The great progress and development of social networks has affected the biggest economic problem in the last year, "Covid19", which has made almost every activity move to the Internet, or social networks. "How much time do you spend on social media per day?" Is the next question that was asked with pre-set answers. It can be seen in the chart below that respondents most often spend 2-3 hours on social networks a day (81.6%). The least number of respondents spend less than an hour on social networks, the number of respondents who answered so is 3 respondents out of a total of 102 answers, which is 2.9%. This is followed by respondents who answered that they spend 1 hour a day on the social network, 8 of them out of a total of 102 respondents, which is 7.8%. Also, members of Generation Z who spend 5 hours or more have 8 answers, which is 7.8%. Based on these analyzes, it is possible to conclude that Generation Z is a generation that is responsible and knows how to balance between real life and digitalization, perhaps because they grew up with technology.

Regarding the observations of ads on social networks, 91 respondents answered that they notice ads very often, then often (10%) and sometimes (2%). The question was formed using the Likert scale where mark 1 meant never see, while mark 5 meant "very often". This is not surprising because today there is no activity that has not moved to social networks and the Internet. Asked about "Which social network shows the most ads?" - respondents answered that they show the most ads on the social network YouTube (44 respondents), which is 42.7%. These are video ads that are most often displayed at the beginning of the content viewed, but can also appear in the middle of the content viewed. This type of ad can be skipped after 5 seconds. Approximately 34 respondents answered that they are mostly shown ads on the social network Facebook, which is 33%, followed by the social network Instagram (25 respondents), which is 24.3%. We can conclude that YouTube advertises the most products or services, which is not surprising because there is a new possibility for users to pay monthly or annually without being shown any ads. The price of this option is about 60 kn per year.

Graph 2. Social networks with the most displayed ads



Source: author's contribution

Graph 2 shows the structure of social networks on which ads are displayed the most.

The user's reaction to the displayed ads was investigated through the question "Do you skip ads on social networks?". The vast majority or 88 respondents of Generation Z answered that they skip ads on social networks, which is 85.4%. Slightly less than 12% of them answered that they do not skip the ad so often, ie they somewhat agree with the statement, while 4, which makes 4% of the respondents, answered that they do not skip every ad.

Perception of the application of behavioral advertising techniques was investigated with the question "Do you see ads for searched products?" Members of the surveyed population Z answered (102 respondents) which is 100%. This is not surprising because Google's largest search network filters and displays ads that are relevant to us by our interests, age, gender, location, activity, time of day, and if we signed up for the newsletter using our Google Account. Users are also offered the option to block certain ads.

To the question "Do you think that companies are too intrusive when displaying ads?", 88 respondents, which is 85.4%, believe that companies are quite intrusive when advertising. While, 13 respondents, which is 12.6%, think that companies are not so intrusive, while two of them (1.9%) are not sure whether companies are intrusive or not. By overloading ads on social networks, companies create a counter effect and make users' ads irritating and annoying. Some research believes that advertising should be in the range of 10-15 ads, and monitor the success of the campaign and respond accordingly and target the audience that is interested in a particular product.

Regarding the frequency of ad display, users believe that it is acceptable to see the ad on the social network for 2 to 3 days (43.7% of respondents). Then 36.9% of users think that it is acceptable for them to see the ad for 4-7 days, and 16.5% of users think that it is acceptable for them to see the ad for 1 day, and 1% of users think that it is acceptable for them not to see ads at all. Ads on social networks as already mentioned are paid only if the user clicks on the ad.

The last question mentioned in the survey was Generation Z advice for marketing professionals how they could improve their ads. This question was answered by a total of 20 respondents out of a total of 102, which is about 20%. Users stated that businesses should be creative, innovative when displaying ads. There were also tips that companies should not advertise on social networks because certain users are bothered by it because it interferes with them while reading some blogs or watching interesting video content. Below in Table 2 are shown tips from surveyed members of the Generation Z to help improve the display of ads on social media.

Table 2: Generation Z tips on improving social media advertising campaigns.

Question	Answers
What advice would you give to marketing professionals - what can they do to be more successful in advertising to you as a customer?	That they are less intrusive.
	„Be creative and interesting“
	„That advertising could be shorter but more interesting also“.
	„Advertise the same stuff every couple of days, shorter the ads timespan, point out the price immediatly, if possible.“
	„ That there's no ads at all“
	„I'm most attracted for opening ad by that first photo, first design which is the reason why we click on the ads, so I think that the more effort should be given for that first visual part to be as modern and interesting as possible and to stand out from others in a sea of similar ads.“
	„to make the content of the ad relevant“
	„To monitor shopping habits“
	"To submit ads based on search, but not to be intrusive."
	"The content of the advertisement should be as realistic as possible."
„Free samples“	

Source: author's contribution

In the next chapter, concluding remarks are given.

6. Conclusion

In modern times and the world of technology, it is difficult to capture the attention of consumers and members of Generation Z and offer something new to them, which will surprise and interest them in a different, unseen way until now. The media offer a variety of content, from advertisements to products with which they "bombard" members of Generation Z in order for them to opt for their promotional content.

This research has confirmed so far many insights into trends in advertising and thus further contributed to the theory (primarily in the form of the originally constructed research instrument) and practice regarding advertising on social media.

It is very challenging for advertisers to advertise today because it is easy for users to skip or bypass an individual ad. Advertisers are looking for a number of new creative ways to stand out from the crowd. Advertisers should advertise as truthfully as possible today because Generation Z is the generation that today has all the information available in the palm of their hand. According to this research, Generation Z states that advertisers today are too intrusive when advertising, and the majority of the surveyed population believes that advertisers should advertise for 2-3 days maximum because they consider everything above that "tiring".

It can be concluded that the surveyed Generation Z believes that advertisers should communicate to users messages that are useful to them and information that would shorten their time searching on the Internet, and some respondents stated as a recommendation that they would like the price to be highlighted. Today, all generations, not just Generation Z, tend to trust the recommendations of other users, but the advertisers themselves.

Based on the research conducted, it is possible to conclude that Generation Z is a generation that owns several social networks in large numbers. Generation Z is a generation that was "born with a mobile phone in hand" and actively uses social networks. If companies want to get closer to these users, they should focus their marketing efforts on communicating with them through the channels preferred by that generation, which are social networks and the Internet in general. Generation Z is a generation that is digital and visual, and their attention span is short-lived. Businesses should create ads that are visual, quality photography that communicates a clear message on social media. Ads should include the language used by this generation, such as some English terms and emoticons, especially smilies. Ads should be authentic, simple and understandable to the generation with whom the message is communicated. Businesses should monitor the development of social networks as each social network develops rapidly and new elements are added.

The company's communication with customers through advertising should be relaxed, adapted to everyday communication, and companies should monitor the development of social networks and use it to maintain contact with Generation Z, which is a recommendation for future research.

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THE FINANCING OF GREEN TRANSITION AND ENVIRONMENTAL POLLUTION: EVIDENCE FROM ISTRIA COUNTY

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Abstract

In order to prevent environmental pollution, each Member State of the European Union, including Croatia, must ensure adequate funding. Therefore, funding for environmental protection is provided from various sources in order to maintain a balance in the environment without pollution or contamination. Currently, there are two major funding programs in the European Union - the European Green Deal Investment Plan and the Just Transition Mechanism. The overall goal is to make the European Union the world's first carbon-neutral bloc by 2050. The aim of the paper is therefore to present the concept of the Green Transition, i.e. the transition to a resilient and low-carbon economy, sources of funding as well as fiscal policy instruments. In addition, the results of a questionnaire on environmental pollution and financing of Istria County in 2022 are presented. Istria County, as one of the developed counties of the Republic of Croatia, promotes the development of ecological policy very well. The County is aware that it is very important to develop environmental policy on a larger scale and to invest in environmental protection, especially for the sake of future generations of the County. The conducted research has shown the importance of fiscal policy instruments in environmental protection for sustainable development, but also for the life of future generations.

Keywords: green transition, financing, fiscal policy instruments, Istria County

JEL classification: H10, Q56, H30

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1. Introduction

The need to achieve a low-carbon future and reduce greenhouse gas (GHG) emissions to zero by mid-century is becoming a pressing issue for European policymakers. By 2050, the European Union (EU) aims to become the world's first carbon-neutral continent. To this end, the concept of green transition has been developed, i.e. the transition to a resilient and low-carbon economy. The fundamental features of this concept are the transition to a fossil fuel-free society, the transition from a linear to a circular economy, and the importance of social inclusion, i.e., how to mitigate the potential impacts of the green transition on the income, employment, and well-being of different populations and regions. Achieving this will require substantial financial investment from the public and private sectors, as well as the development of innovative financial and fiscal instruments. In the context of this concept, two other concepts are also closely linked - green growth and green finance.

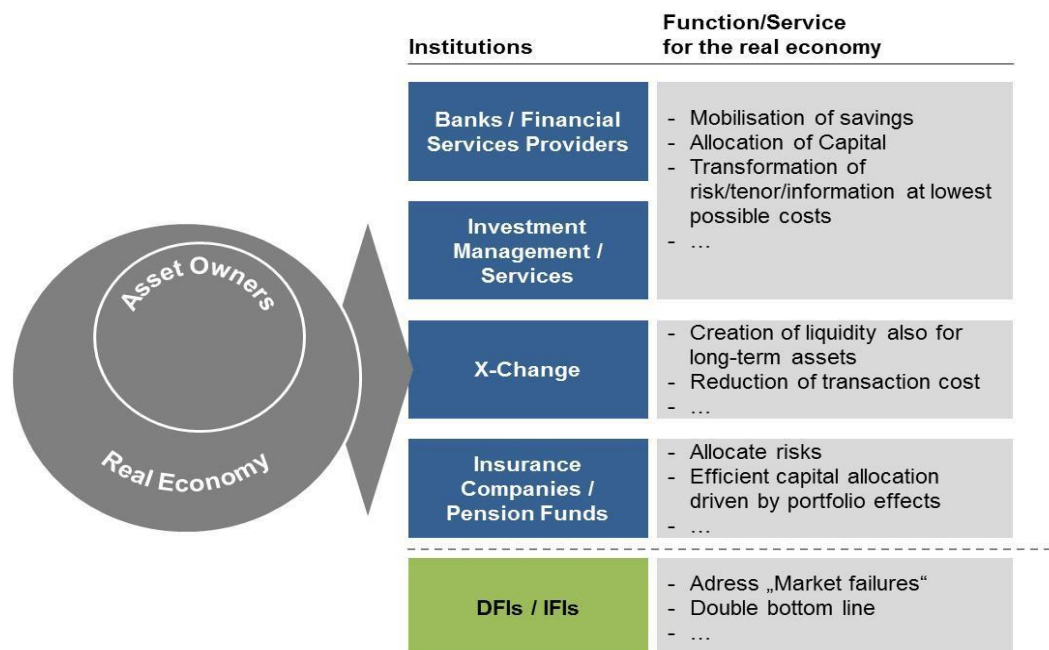
In recent years, the appeal and practice of green finance to accelerate decarbonization and sustainable growth has steadily increased. Green financing achieves not only social goals of energy conservation, but also financial goals of sustainable development. Environmental and ecological benefits are valued more highly in green financing, which gives greater priority to the long-term growth of the environmental protection industry (Khan et al., 2021e). To accelerate the transition to a green economy, the financial industry needs to develop green features in its operations and rely on novel financial instruments to change the investment positioning of companies. In addition, the first green bond with AAA ratings was issued in 2007 by multilateral institutions such as the European Investment Bank and the World Bank. Meo and Karim (2022) found that the top ten economies supporting green finance are Canada, Denmark, Hong Kong, Japan, New Zealand, Norway, Sweden, Switzerland, the United Kingdom, and the United States. It can be concluded that in Europe, especially Croatia, is still underinvesting in and promoting a green transition and green finance approach.

Therefore, the aim of the paper is to present the concept of green transition, i.e., the transition to a resilient and low-carbon economy, the sources of financing, and the fiscal policy instruments. In addition, the results of a questionnaire on environmental pollution and financing of Istria County in 2022 are presented. The contribution of the paper lies firstly in the theoretical definition of the concept of green transition, and secondly in the empirical research results on environmental pollution and financing of Istria County. The paper is organised as follows. After a brief introduction, Section 2 provides an overview of financial institutions and their function in financing the concept of green transition. The concept of green transition and financial development is presented in Section 3. Data and methodology are part of Section 4, while empirical results are presented in Section 5. The final section provides a conclusion and recommendations for further research.

2. Overview of financial sector institutions and functions

As the EU aims to become the first carbon-neutral continent by 2050, some member states, including Croatia, will undergo profound economic and social transformation. Achieving this will require not only political commitment but also large financial investments. Therefore, the financial sector plays an important role as a financial intermediary and is the source of the capital needed for economic growth. In addition, climate finance is needed to shift capital from business-as-usual to new green asset classes with an already attractive risk-return profile. This will create a green project along with green assets. Figure 1 shows the key institutions in the financial sector and their functions.

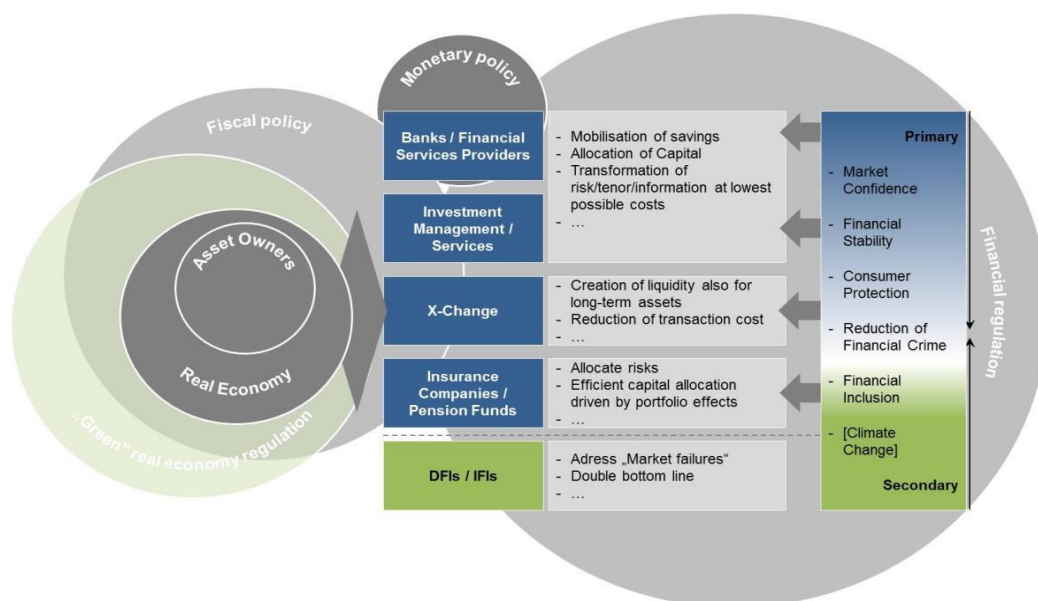
Figure 1. Financial Sector Institutions and Functions



Source: UNEP, 2014.

From the above figure, it can be concluded that different institutions have different function in supporting the green projects and other activities. Looking at all green technologies implemented so far in Europe and beyond, it can be seen that green technologies are characterized by high capital intensity and consequently high upfront financing needs. Apart from this basic framework, a broader framework is inevitable for a more intensive development of green financing. This framework is illustrated in Figure 2.

Figure 2. Broader Regulatory Framework of Financial Sector



Source: UNEP, 2014.

In addition to the financial regulatory framework, monetary and fiscal policies are also important drivers of green financing. These policies include financial and fiscal instruments such as feed-in tariffs, grants and subsidies, loans, and taxes. For example, feed-in tariffs aim to promote renewable energy development and reduce uncertainty for investors. They are an important instrument in Europe, especially in Germany, Spain and France. Grants and subsidies play an important role in promoting green power, while among taxes, environmental taxes are the most popular. Another important tax instrument is value added tax with reduced rates for equipment and materials. All these instruments are efficient in promoting green finance and green growth, but also costly for governments.

3. The concept of green transition and financial development

The dramatic consequences of climate change and environmental degradation have put the need for a more sustainable economy high on the agenda. In 2019, the EU published its plans to address climate and environmental challenges through the European Green Deal (European Commission, 2019). This new strategy aims to make Europe carbon neutral by 2050, boost the economy through green technologies, create sustainable industry and transport, and reduce pollution. This requires a fundamental transformation of the European economy. To this end, the concept of green transition was created, which includes the necessary development and gradual introduction of green technologies, projects, financial and fiscal instruments, as well as grand plans to achieve a climate-neutral continent. In addition, this concept is also known as the Green Economy Transition (Potts et al., 2019). It refers to a planned or constructed green transformation of economic, technological, social, environmental, and governance systems with the goal of achieving climate and sustainability goals.

The desired transformation in the EU will require huge investments from both the public and private sectors. To finance the Green Deal, the EU Commission has adopted the European Green Deal Investment Plan (EGDIP) - also called the Sustainable Europe Investment Plan (SEIP) - which aims to mobilise a total of EUR 1 trillion for the green transformation of the European economy (D'Alfonso, 2020). More than half of the required funding (EUR 528 billion) will come from the EU budget and the EU Emissions Trading Scheme. The remainder will be raised through the InvestEU programme (EUR 279 billion) and national cofinancing (EUR 114 billion) by 2030. The European Innovation Council has also secured a budget of EUR300 million to invest in innovations that help achieve the goals of the Green Deal. The EU estimates that annual investments of around EUR 350 billion will be needed in the energy system alone by 2030 to achieve the 55% emissions reduction target (European Commission, 2021). In addition, about EUR 130 billion per year will be needed to meet environmental targets. In addition, the European Bank for Reconstruction and Development (EBRD) aims to increase the share of green finance to more than 50% of its annual business volume by 2025 as part of its new Green Economy Transition (GET) 2021-25 approach (EBRD, 2022). One of the targets for the next five years is to reduce greenhouse gas emissions by at least 25 million tonnes. The EBRD has financed over 2,000 green projects and signed €36 billion in green investments that will reduce an estimated 104 million tonnes of carbon emissions per year (EBRD, 2022).

All countries and sectors in the EU must contribute to a carbon-neutral economy. However, the task is not the same for all. Regions dependent on fossil fuels and carbon-intensive industries will be particularly affected and will experience intense economic, environmental and social changes. For this reason, the Commission has created an additional source of funding to leave no one behind: the Just Transition Mechanism (EC, 2020). It includes financial and technical support for EU member states to ensure that the transition to a carbon-neutral economy happens in a fair way. It focuses on supporting workers and communities affected by the phase-

out of polluting activities (often, but not exclusively, coal mining and coal-based energy facilities) through temporary financial support and early retirement, job placement services, training, business incentives, and support for small and medium-sized enterprises (SMEs) (Krawchenko and Gordon, 2022). It includes funding from the EU budget, cofinancing from Member States, and contributions from InvestEU and the EIB to mobilize EUR 100 billion in investments over the period 2021-2027, amounting to EUR 143 billion when extrapolated over 10 years to ensure a just transition (EC, 2020).

Aligning financial flows with zero emissions targets is essential to achieving the environmental and energy transition. Governments at all levels need to set the right incentives to steer finance away from emissions-intensive projects and toward investments that support rapid change. The EU has already made some progress in this area, reducing greenhouse gas emissions by 24% between 1990 and 2019, while the economy grew by 60% (EC, 2022c). Nevertheless, projections indicate that if current EU and national policies were fully implemented, EU-27 GHG emissions would be about 47% below 1990 levels by 2030 (EC, 2022c). In addition to strong political commitment at the European level, Member States are the main actors in achieving European energy and climate targets. Since 2009, EU Member States have taken action to meet both the 2020 and 2030 targets through national measures. The Strategy for Low Carbon Development of the Republic of Croatia by 2030 with an Outlook to 2050 (MINGOR, 2021) envisages a reduction in emissions compared to 1990 levels in two scenarios: 33.5% by 2030 and 56.8% by 2050 in the first scenario and 36.7% by 2030 and 73.1 or 80% by 2050 in the second scenario. It is estimated that the transition to low-carbon development in Croatia will require between 5.13 and 8.75 billion euros in the period from 2021 to 2030. In the period from 2031 to 2050, the cost will be between 14.2 and 22.3 billion euros (0.96 to 1.51% of GDP) (MINGOR, 2021). For projects that have a positive impact on the climate, the Republic of Croatia has available funds totaling approximately 9 billion euros (EC, 2022a). In addition, the Republic of Croatia will receive 23.7 million euros from the Just Transition Fund. The fund will support Istria and Sisak-Moslavina counties in achieving just climate change, as these are traditionally dominated by mining and fossil fuel-dependent industries, and reducing greenhouse gas emissions in these areas could have the greatest impact (EC, 2022b). The environmental challenges in Istria County are related to the production of cement and electricity from coal. These funds should also be used for risk mitigation and climate change adaptation measures to increase the resilience of the Republic of Croatia, reduce vulnerability, and lower the cost of damage caused by climate change. EU investment in Istria County is expected to create 300 direct and 300 indirect jobs and retrain 200 people to prepare the local workforce for new green jobs and equip local businesses with the skills needed for economic transformation (EC, 2022b).

While all of these funds represent a large sum, they leave a large gap that must be financed primarily by the private sector, for which appropriate regulatory frameworks and incentives are needed to further encourage environmental, social, and governance (ESG) investments (Brühl, 2021). Unlike traditional finance, which focuses on profit maximisation, green finance aims to seek green opportunities and developments with high financial returns (Wang and Wang, 2021). Green finance involves raising funds to address climate and environmental issues (green financing) on the one hand, and improving the management of financial risks related to climate and the environment (greening finance) on the other (Spinaci, 2021). Sustainable finance is an evolution of green finance, as it takes into account ESG issues and risks, with the aim of increasing long-term investments in sustainable economic activities and projects (Spinaci, 2021).

A growing stream of literature explores the importance of green finance for sustainable development (Wang et al., 2022, Lee, 2020, Sachs et al. 2019). Research by Bamisile et al. (2020) shows that while green finance has a significant impact on polluting industries, it also significantly promotes green initiatives. Muganyi et al. (2021), focusing on China, find that green

finance-related policies led to significant environmental improvements, resulting in a 38% decrease in sulphur dioxide emissions, a 28% decrease in industrial gas and smoke emissions, and a 20% decrease in total sulphur dioxide production. Zhang et al. (2021) find that foreign direct investment and preferential trade agreements lead to a shift in pollution between Belt and Road countries. Streimikiene and Kaftan (2021) demonstrated that the development of green finance could slow the growth of polluting industries by increasing production costs and promoting environmental change. Zheng et al. (2021) argued that the banking and finance sector can encourage private investors to invest in green finance. However, according to Wang et al. (2022), green financial investment is held back by short-termism and policy uncertainty. Ren et al. (2022) believe that the definition of major investment projects is still complex and unclear. The transition to sustainable development is still seen as extremely complicated and unpredictable. The conventional and green economies could benefit greatly from the inclusion of green finance to accelerate the transition. Taghizadeh-Hesary and Yoshino (2019) claim that green finance and FinTech development can help reduce pollution in China's industrial sector. According to Guild (2020), another benefit of green finance integrity is that it helps promote a greener economy. It seems that stricter government regulations, lower costs for companies and institutions involved in creating green finance, stronger government oversight, and higher compensation for consumer pollution could help mediate the impact of green finance on long-term development. Further research shows that renewable energy consumption and foreign direct investment in N-11 countries, CO₂ emissions, and research and development contribute to green finance and climate change mitigation (Sarma and Roy, 2021). All authors agree that building a deep green finance system can help mobilize investment in clean production and sustainable growth.

In 2021, the European Commission adopted a new "Strategy for Financing the Transition to a Sustainable Economy," which aims to increase the potential of sustainable finance by expanding green investment markets and addressing the problem of greenwashing. The strategy is based on four main themes: 1) financing the transition to sustainability; 2) improving access to sustainable finance; 3) contribution of the financial sector to the objectives of the European Green Deal; 4) promoting an international consensus on sustainable finance (EC, 2021). This strategy is a complementary effort to achieve global goals such as the Sustainable Development Goals UN and a net-zero economy by 2050. The EU's efforts to integrate sustainability into financial institutions set an example for the rest of the world.

4. Data and Methodology

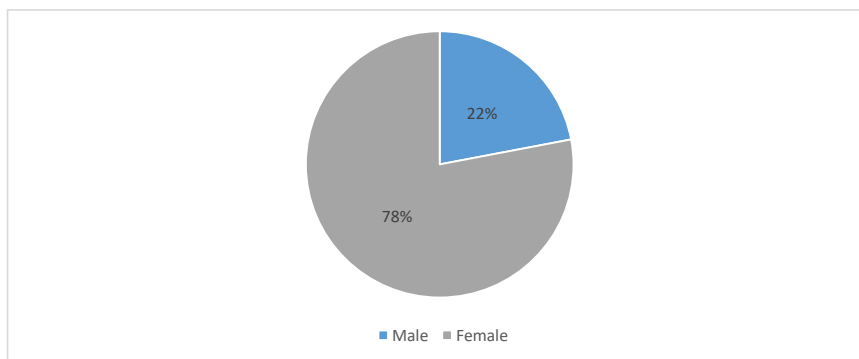
Environmental protection and protection of the natural environment of man is also important in the County of Istria. All important environmental protection programs in the counties are approved by the assemblies, and it is important to constantly monitor the quality of the environment and changes in its condition, monitoring of natural and other phenomena, financial resources and systematic measurement of emissions. With the approval of the Administrative Department of Istria County, the Environmental Protection Plan of Istria County is structurally and substantively consistent with the draft Croatian Environmental Protection Plan from 2016 to 2023 and elaborates the principles and principles of environmental protection and sustainable development of the guidelines. The priorities are based on the vision of national, European and international strategic documents related to environmental protection, sustainable development and the transition to a circular economy, with the fundamental goal of improving environmental protection and management for sustainable development. The aim of the empirical research was to investigate the situation and opinion about environmental pollution, as well as the possibilities of financing environmental protection in the County of Istria in 2022.

The questionnaire was conducted on a sample of 50 respondents from different cities in Istria County. The online survey was conducted for one month, i.e. from 26 April 2022 to 26 May 2022. It consisted of 21 questions, with each question presented graphically and in tabular form, and was distributed online or through social networks exclusively to people from Istria County. The purpose of the questionnaire is to show how much people actually care about environmental pollution and how much knowledge they have about funding environmental protection and environmental protection projects in Istria County.

5. Empirical results

The results of the survey show interesting results. Figure 3 shows the results for gender.

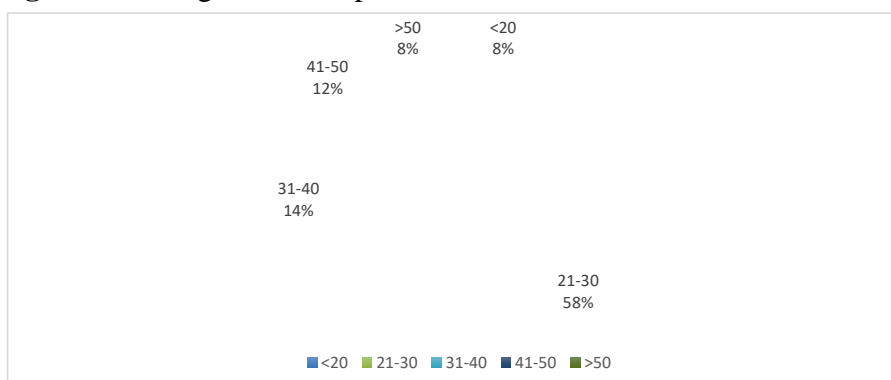
Figure 3. Gender of the respondent



Source: Authors' calculation.

From the above figure we can conclude that 50 inhabitants of Istria County participated in the research, of which most respondents were female, i.e. 39 or 78%, while only 11 or 22% were male. The results of the old age respondents are shown in Figure 4.

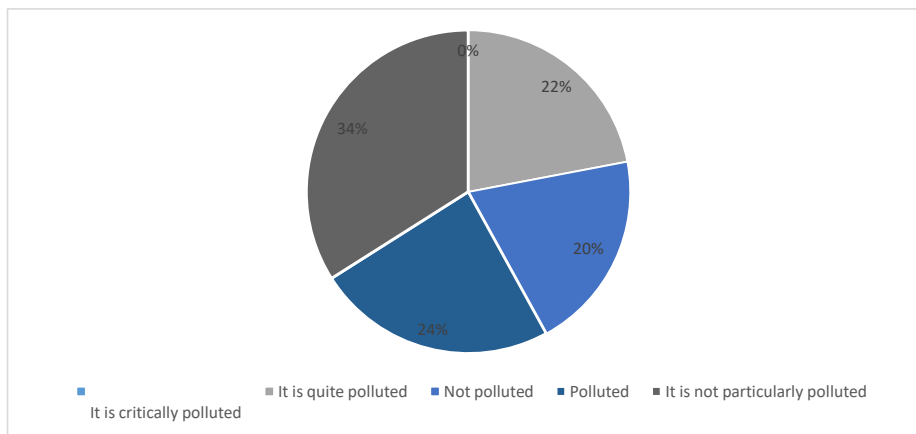
Figure 4. Old age of the respondent



Source: Authors' calculation.

From the analysis of the respondents, we can conclude that the majority of the respondents are between 21 and 30 years old, 29 or 58%. This is followed by respondents aged 31-40, 7 or 14% of them. Only 6 or 12% of the respondents are between 41-50 years old, and the fewest respondents are under 20 and over 50 years old, 4 or 8%.

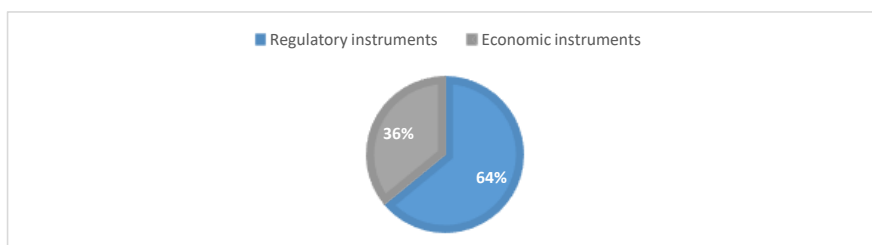
Figure 5. Respondents' opinion about pollution of the Istrian County



Source: Authors' calculation.

On the basis of the observed data, it can be stated that none of the 50 respondents believes that the County of Istria is critically polluted. The largest number of respondents, 17 of them or 34%, answered that it is not particularly polluted. This is followed by 12 respondents who think that Istria County is polluted, while 10 respondents think that it is not polluted. After all, 11 respondents, i.e. 22%, think that Istria County is quite polluted.

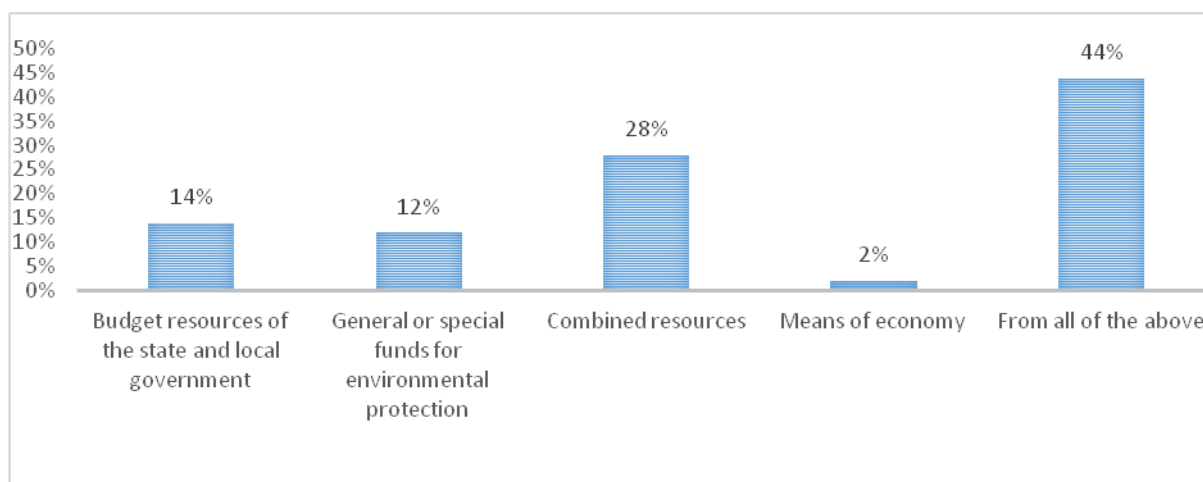
Figure 6. Respondents' opinion on the most important role of the environmental protection financing instrument



Source: Authors' calculation.

Figure 6 shows that the majority of respondents, 32 and 64%, respectively, believe that regulatory instruments play the most important role in financing environmental protection, while 18 of them, or 36%, believe that economic instruments play the most important role.

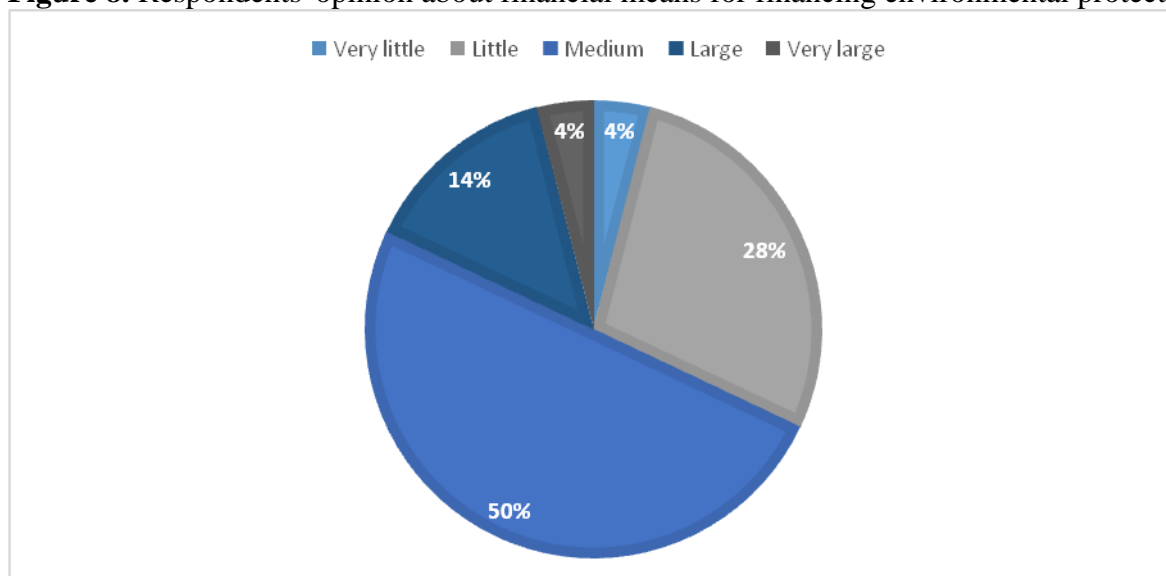
Figure 7. Respondents' opinion on the on the source of environmental protection financing



Source: Authors' calculation.

Figure 7 shows that a maximum of 22 respondents, i.e. 44%, believe that funding for environmental protection comes from all the sources mentioned. This is followed by 14 respondents, i.e. 28%, who think that the funding comes from combined sources, and 7 respondents think that it comes from budgetary funds of the state and self-government units. 6 respondents, i.e. 12%, think that the financing is from general or special funds for environmental protection, and only 1 respondent thinks that the financing is from business funds.

Figure 8. Respondents' opinion about financial means for financing environmental protection



Source: Authors' calculation.

From the figure we can conclude that 25 respondents, i.e. 50%, think that the County of Istria invests little financial resources in financing environmental protection, while the smallest number

of respondents, 4%, i.e. 2 out of 50, think that the County of Istria invests very little, but also that the investments are very high.

Moreover, from the survey of respondents it can be concluded that 24 respondents, i.e. 48%, think that Istria County moderately participates in the development of various projects for the prevention of environmental pollution and for higher quality of environmental protection, and 10 respondents think that it participates little. 14 respondents think that they participate a lot, and only 2 respondents think that they participate a lot. These results suggest that the County of Istria, which implements many projects, does not adequately communicate them to citizens, and that a large number of them are not familiar with the projects implemented.

6. Conclusion

The EU has set important climate and energy targets over the years, underscoring its strong political commitment to combating greenhouse gas emissions and reversing the effects of climate change. The most recent major plan is the European Green Deal, which aims to decarbonize and transform the European economy. Therefore, significant investments are needed to achieve the ambitious goals of the European Green Deal. The private sector will play a key role in financing the green transition. This requires coherent strategies, innovative regulatory frameworks and smart instruments. National governments will also play an important role in financing the transition by aligning public spending with sustainable policies. They will also need to stimulate demand for more sustainable goods and services through green public procurement and reduce the carbon footprint of public services.

Therefore, environmental protection has become a very important social and political issue in recent years. It is becoming more important every day because people lack clean air and water. More and more people are realising the importance of working together to protect the future of humanity. In order to meet certain conditions for accession to the Convention and to align its legislation with the legislation of the EU, the Republic of Croatia is still working on the implementation of various action plans and strategic documents for environmental protection. An institutional framework of agencies and institutions for environmental protection has been created to control the implementation of the objectives set in the plans and documents and the timely implementation of measures and funds within the policy under the guidance of the Fund for Environmental Protection and Energy Efficiency. Regulatory instruments are used primarily, but the most effective are economic instruments, which have also proven to be the most important in the Republic of Croatia. Economic instruments, especially fees and environmental taxes, generate most of the revenue for environmental protection.

The County of Istria, as one of the counties of the Republic of Croatia, which is a member of the EU, promotes the development of ecological policy. The County is aware that it is very important to develop environmental policy on a larger scale and to invest in environmental protection, especially for the sake of the future generations of the County. Therefore, it implements a large number of projects that are of great benefit. The Environmental Protection Program of the County of Istria for the period from 2019 to 2023 plays the largest role in the County of Istria, in which the emphasis is placed on sustainable development, environmental protection and circular economy, as well as the improvement of environmental protection and management for sustainable development. The conducted research has shown the importance of tax policy instruments in environmental protection for sustainable development, but also for the life of future generations. By showing the consequences of environmental pollution and its financing, a better picture is given of how much the environment is actually threatened. In fact, respondents are well acquainted with the financing of environmental protection and are aware of the importance of developing funds for environmental protection. Although the respondents

believe that the County of Istria invests medium financial resources in the financing of environmental protection, it has actually made a great step forward in environmental protection and carefully preserves all natural resources and assets and is focused on environmental protection and sustainable development despite the large influx of people during the tourist season. Like any paper, this one has some limitations. The first limitation is that the empirical study focuses only on one county, and the second is that the time period is only one year. We therefore recommend that all counties, municipalities and cities in Croatia and beyond should be analysed in depth.

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THE INFLUENCE OF TRANSFORMATIONAL AND TRANSACTIONAL LEADERSHIP STYLES ON EMPLOYEE LOYALTY DURING THE PERIOD OF THE COVID CRISIS IN THE REPUBLIC OF CROATIA

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Abstract

This paper investigates the influence of transformational and transactional leadership styles on employee loyalty to the organization during the COVID crisis, using the example of organizations in the Republic of Croatia. Previous research and knowledge confirm that management leadership styles greatly influence the loyalty and satisfaction of employees in periods without crisis features. Therefore, the authors want to determine if the mentioned leadership styles influence employees' loyalty to the organization in the crisis period, that is, if employees notice differences in the management's leadership compared to the pre-crisis period. The analysis of the results of the research conducted in August 2022 on 204 respondents from the public and private sectors confirmed the following hypotheses:

H1: Transformational leadership style has a positive effect on employee loyalty to the organization in a period of crisis

H2: Employees notice a difference in leadership style compared to the pre-crisis period

The research results are applicable and can benefit management in creating a leadership style in crisis conditions.

Key words: leadership styles, transformational leadership style, transactional leadership style, employee loyalty, employee satisfaction

JEL classification: L14, O15

EMPLOYEES' MOTIVATION WHEN WORK FROM HOME IN ERA OF DIGITAL TRANSFORMATION

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Abstract

New business conditions present new challenges to the management of both profit and non-profit organizations. Working conditions during the pandemic have set new tasks for the management with the aim of efficient organization of business activities, preserving the health of employees and ensuring the stability and functionality of business entities. Working from home is becoming an increasingly widespread model due to available technology and accelerated digital transformation of businesses during the pandemic time. This requires changes in the management of human resources as well as certain organizational procedures. At the same time, it is necessary to maintain employee motivation at a high level to maintain the quality and productivity of the work performed. Motivation is an indispensable factor in every human activity, it affects the work performance of employees and thus the company's results and its progress. Although the motivation and satisfaction of employees has been thoroughly investigated, it is not the case when it comes to the work from home conditions. The goal of the research was to gain insight into the employees' perception of the importance of various motivational factors, both when working from home and in the employer's premises. The quantitative research was done on a sample of 112 employees from Croatia with the work from home experience during the lock-down period in 2021. The results showed that employees value the importance of individual motivational factors differently when working from home. The differences in the importance of motivational factors were also determined regarding the demographic characteristics of the respondents, such as the age and gender of the employees. When working from home, employees expected support from the management in the form of good work organization, clear instructions, fair distribution of work, timely feedback, and transparent and fair remuneration in accordance with work results, all above mentioned were emphasized more by female respondents. Also, flexible working hours and IT equipment provided by the employer can serve to a certain extent as a motivational factor when working from home. The presented results contribute to a better understanding of employees' expectations and can serve as a guideline for management to maintain employees'

motivation when work from home, which can consequently contribute to increasing productivity and business success in the age of digital transformation.

Keywords: Croatia, digital transformation, employees' motivation, personnel management, work from home

JEL classification: M5 Personnel Management

1. Introduction

Although until now it was thought that there were great restrictions in the business of organizations, whether profit or non-profit, which will change for the better, the latest events in the world show that it can always be different, often more complex, worse, and more uncertain. Although there is great progress in the development of technology and new products and services around the world, at the same time certain political powers are making problematic moves. The world's superpowers are making very disturbing decisions regarding climate change, causing war conflicts, the growth of terrorism, and threatening the health of humanity.

In the last few years, a major problem for humanity has been the global pandemic (COVID-19), which has completely changed life and business processes. After a pandemic of this magnitude, nothing is the same. The World Health Organization, governments of all countries, health organizations, citizens and business organizations had to adapt to new challenges in a very short time.

In the current business conditions, it is crucial for companies to provide a quality product or service at a competitive price. In non-profit organizations it is important to fulfill the planned goals and expectations of various stakeholders. The top management of the organization (profit, non-profit) is responsible for the implementation of the defined vision and mission, and for achieving the set goals.

Human resources are of particular importance for the success of any organization. It is not possible to ensure efficient and sustainable business without employees who will carry out their tasks with dedication and thereby contribute to the realization of the company's goals. Therefore, one of the key challenges in business is how to ensure a high-quality and motivated workforce.

Organizations pay great attention to the selection process when hiring new employees to ensure that employees have the necessary knowledge, experience, and skills. Of course, during work in the organization, it is very important that each employee can improve existing, but also to acquire new knowledge and skills.

In addition to knowledge and skills, every employee must be motivated for work. The system of work organization and employee rewards must be set up in such a way that the employee comes to work with joy, performs it well, and contributes to increasing efficiency and effectiveness and achieving the organization's goals, whether through individual or teamwork (work teams).

All the above refers to the need of management in organizations to constantly rethink current and future options for development, adapting to new conditions. Risk prediction in certain areas is of increasing importance. In new, significantly more complex business conditions, a series of challenges opens. How to ensure business continuity, delivery of quality and competitive products and good working conditions for employees? How to successfully position new products and services on the market? How to motivate employees to successfully realize planning goals and tasks? How to determine stimulation models that will positively affect most employees?

The goal of this research is to gain insight into how to manage employee motivation when working from home; what is the employee's perception of working from home, what do they miss when working from home and what are the motivational factors that affect them the most.

2. New business conditions and work from home

Many define management as a skill, a group of people with certain abilities and characteristics, and most often they mention "the ability to lead and direct a group towards the execution of certain plans, goals and tasks" (Gutić & Rudelj, 2012, p. 23). Buble (2013) also points to the ambiguity of the term management, which can be seen as a process, skill, scientific discipline, or occupation. The five key managerial functions are planning, organizing, managing human resources, leading, and controlling (Rupčić, 2018). Given that leadership is a process of influencing the activities of an individual or a group to achieve goals, motivation, interpersonal processes, and communication come to the fore in leadership. Not only must the leader have the appropriate abilities, motivation, and power, he must respect that employees have different characteristics, knowledge and skills and different motivation for work (Buble, 2006).

In the new specific conditions, a certain number of organizations were forced to organize work from home. Of course, this was not possible in all segments of work and business. Working from home required the management of organizations to ensure connectivity with the organization so that business processes could run smoothly. Digitization and the development of communication services have made a major contribution to ensuring such business. Employees of organizations, whether they work individually or through teams, collaborate online through communication networks, various video conferences and via e-mail.

2.1. The impact of digitization on the operations of organizations

There are many forces that play a major role in reshaping the world economy, including technology, globalization, ecology, etc. The four forces shaping the new digital age are: 1. Digitization and connectivity 2. Internet explosion 3. New types of intermediaries 4. Customization and customerization (Kotler, Bowen, Makens, 2010, p. 686).

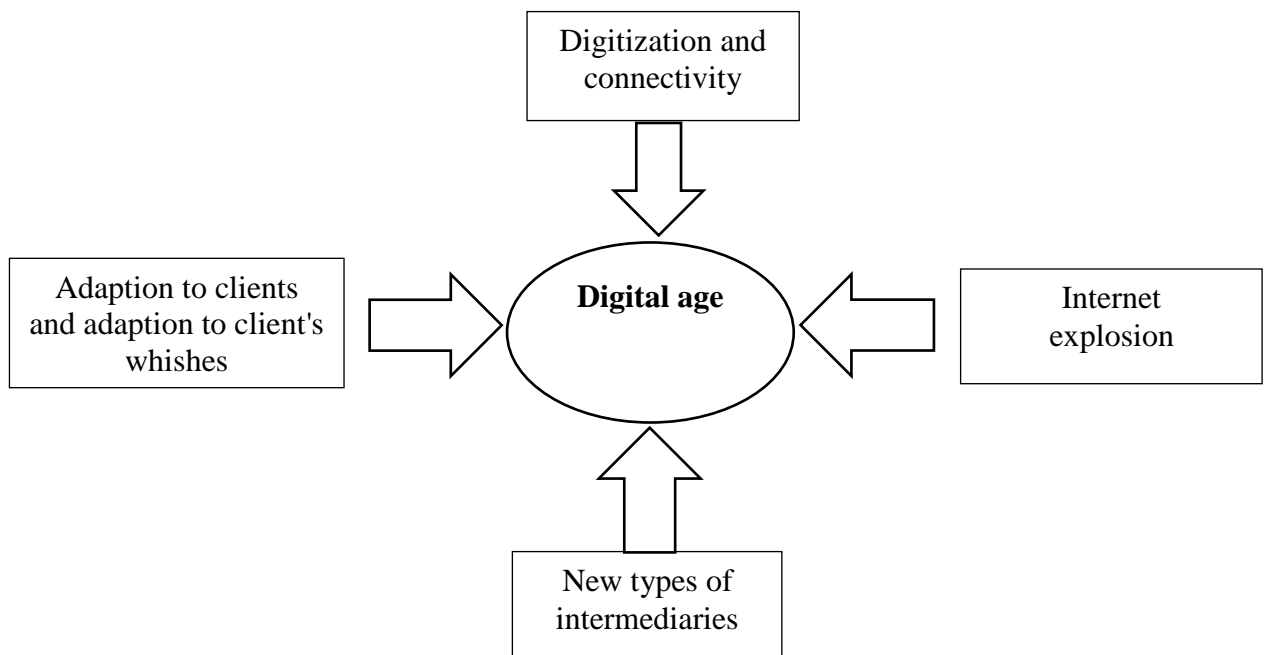
1. Digitization and connectivity

Electronic business is characterized by two phenomena: digitization and connectivity. Digitization consists of converting text, data, sound, and image into a stream of bits that can be sent from one place to another with incredible speed. Connectivity implies the creation of a system of networks and reflects the fact that most of the world's business is conducted through networks that connect people and businesses. This network is called an intranet (internal network) when it connects people within a company, an extranet (external network) when it connects a company with its suppliers and customers, and the Internet when it connects users to a surprisingly large "information superhighway" (Kotler et al. 2010, p. 685).

2. Internet explosion

With the creation of the World Wide Web (www.) and Internet browsers in the 1990s, the Internet grew from an ordinary means of communication into an undeniably revolutionary technology. With the rapid advancement of the Internet and other connection technologies, companies have become proficient in collecting information about individual clients and business partners such as suppliers, distributors, and retailers (Kotler et al., 2010, p. 685).

Figure 1. Forces that shape the digital age



Source: Kotler et al. (2010, p. 686).

3. New types of intermediaries

New technologies have encouraged hundreds of entrepreneurs to start Internet companies, so-called dot-coms. The creation of new intermediaries has forced many companies to rethink the way they do business (Kotler et al., 2010, p. 685.)

4. Adaptation to clients and clients' wishes

As a result, companies have become more adept at individualizing their products and services, messages, and media. Electronic business implies the use of electronic platforms - intranets, extranets, and the Internet - in running the company's business. Numerous companies have created their websites for the purpose of informing and promoting products and services. They created internal networks to help employees communicate with each other and access information stored on company computers. They have created external networks with their main suppliers and distributors to facilitate the exchange of information, orders, transactions, and payments (Kotler, et al. 2010, p. 685).

In everyday communication, we come across a number of terms from the digital world. Recently, **digital transformation** has been mentioned more and more frequently, which affects all segments of society and changes our work and way of life. "Digital transformation is the process by which companies embed technologies across their businesses to drive fundamental change."¹⁷

Digital transformation is the process of introducing digital technologies into all segments of life and business, fundamentally changing business processes and habits. It is also about a certain cultural change that requires a new approach to work and business. For organizations that want to become or remain relevant, it is necessary to follow the news in the development of digital services. Digital transformation requires expert decisions to establish a new business model, not just to improve operations. Digital transformation is a process that begins when the organization decides to introduce digital technologies in all areas of business and work and continues until full integration in the organization is achieved. For the implementation of such a process, it is necessary to carry out all activities related to the procurement and implementation of

¹⁷ Accenture. *What is digital transformation?* Accenture.com, <https://www.accenture.com/us-en/insights/digital-transformation-index>, 20.9.2022.

digital technology, as well as ensuring appropriate training of employees and control of the activities carried out. The demand for specialists in the field of IT is increasingly pronounced, and the development of new technology and digitalization require new skills and knowledge. Creating a strategy related to successful transformation is a challenge for all organizations. A big obstacle is the employees' fear of change, and this is most evident in older generations for whom new technology is a big challenge. In general, people are not inclined to change, therefore there is a certain resistance among employees.

Benefits of digital transformation consist of increased efficiency, greater business agility and, ultimately, the unlocking of new value for employees, customers, and shareholders.¹⁸ Digital transformation brings numerous advantages for both organizations and users of their services. The most important advantages can be the following: increased satisfaction of users of products and services, improving the quality of business, income growth, cost reduction, acceleration of business processes, easier work for employees.

2.2. Work from home

A specific form of work is work from home (telecommuting or remote working or work from home). Working from home is a form of work in which the worker performs part or all the work from home. For many workers, this represents an ideal job, it does not require preparation for work, travel, colleagues do not disturb them and similar problems that arise when performing work in the company.

According to Robins & Judge (2009), three categories of jobs are considered to be the most suitable for working from home: routine information processing tasks, mobile activities, professional jobs and other knowledge-based jobs.

Of course, effective work from home requires devices and high-quality digital connectivity so that the process of work and communication runs smoothly and continuously.

There are certain advantages for the organization, lower operating costs, higher labor productivity and lower employee turnover. In this case, the management has less direct supervision over the employees, and for some employees this way of working represents a feeling of isolation and can have a negative effect on job satisfaction (Robbins & Judge, 2009, p. 234). Therefore, the management of each organization should weigh the advantages and disadvantages of working from home and make decisions about the optimal work model.

For many employees, working from home has several advantages and is a motivation for work. First, it is not necessary to travel to work, which is a big problem in urban areas, especially in the morning and late afternoon. Flexibility of working hours is also a motivation. The employee can plan his own working hours and set priorities.

According to research conducted by the German Ifo institute, on a sample of 36,000 employees from 27 countries and different industries, working from home amounts to an average of 1.5 days per week. According to Mathias Dolls, a researcher at the Ifo institute, "no event has so comprehensively changed the lives of employees in such a short time as the coronavirus pandemic." In the USA, on average, working from home is 1.6 days a week, in Germany 1.4, France 1.3 and in Japan 1.1 days. Although the number of days working from home varies from country to country, what all employees have in common is that they prefer working from home more than their bosses.

McKinsey's American Opportunity Survey from spring 2022, provides data on how flexible work fits into the lives of workers in the United States. 58 percent of employed respondents from a cross section of jobs and employment types—report having the option to work

¹⁸ Accenture. *What is digital transformation?* Accenture.com, <https://www.accenture.com/us-en/insights/digital-transformation-index>, 20.9.2022.

from home full-time or part of the week. 87 percent of workers offered at least some remote work embrace the opportunity and spend an average of three days a week working from home.¹⁹

3. Employee motivation and new business conditions, work from home

The COVID-19 pandemic has shaped certain decisions and activities related to the organization of working hours and work processes. Working from home has increased to protect the health of employees in all countries, including in Croatia.

Therefore, the question arises how to manage the motivation of employees in the conditions of working from home, but before that it is necessary to look briefly at the existing theoretical framework on motivation.

3.1. Theoretical framework on motivation

Motivation is defined as "a set of processes that are responsible for intensity, direction and persistence in efforts to achieve a goal" (Robbins & Judge, 2009, p. 186). Three key elements emerge from the above definition: intensity, direction, and persistence in efforts to achieve a goal (Robbins & Judge, 2009, p. 186). Motivation is influenced by various factors that can be grouped into; individual characteristics, characteristics of the job itself and organizational characteristics (Porter and Miles, 1974, according to Buble, 2013, p. 336).

The basic principles of motivating employees are a) a person who motivates other people needs to be motivated himself, b) goals should be realistic and achievable, c) reward system adapted to the worker, individualized, d) connect rewards with work performance in the long term, for example a year, e) in addition to rewards, ensure public recognition for what has been achieved (Požega, 2012). Furthermore, it is necessary to keep in mind that motivation needs to be maintained and renewed because "motivation and positive feelings are not permanent" (Požega, 2012, p. 119). Money as a reward is an important factor, but its importance decreases if a person already has enough money. Also, it is important to employees how their work is used within the company because it affects the feeling of belonging and connection with the company (which is sometimes even more important than the way they are personally treated). In large organizations, it is preferable to group employees into smaller teams because then employees have a greater sense of belonging. This increases their loyalty, motivation, and commitment to work (Požega, 2012).

This topic as a part of organizational behavior gave birth to a number of theories that tried to explain motivation and motivational concepts (Robbins & Judge, 2009, p. 186). Given that this is an extensive field, and numerous works and theoretical approaches can be found in the literature, only a few systematizations of motivation theories are listed here with a brief description of contemporary motivation theories.

Buble (2006) groups theories of motivation into substantive and process theories, while Rupčić (2018, according to Kincki and Williams, 2013) and Daft (2010) present theories and approaches to motivation through four perspectives; content, process, work design perspective and reinforcement perspective.

Robbins and Coulter (2007) group motivation theories into early and contemporary theories. In early theories of motivation, questionable in terms of validity, but probably the most widely known, authors have mentioned (2007, p. 453): Maslow's Hierarchy of Needs Theory, McGregor's Theories X and Y and Herzberg' Two-Factor Theory. In contemporary theories of

¹⁹ McKinsey 23.6.2022. *Americans are embracing flexible work—and they want more of it.* McKinsey.com, <https://www.mckinsey.com/industries/real-estate/our-insights/americans-are-embracing-flexible-work-and-they-want-more-of-it>, 20.9.2022.

motivation, they have elaborated six more: Three-Needs Theory, Goal-Setting Theory, Reinforcement Theory, Designing Motivation Jobs, Equity Theory and Expectancy Theory. In conclusion they suggested an integrative perspective on contemporary theories of motivation (2007, p. 467). The following is a brief description of selected contemporary theories.

McClelland's theory of needs focuses on three needs.

(1) Needs for achievement: the drive for excellence, for achievement in relation to some set of standards, striving for success. People with a high need for achievement will prefer situations where they have personal responsibility, receive feedback, and are moderately risky. If these characteristics are present at work, people with a high need for achievement will be highly motivated (Robbins & Judge, 2009).

(2) The need for power: the need to get others to behave in a way they would not otherwise behave.

(3) The need for connection: the desire for friendly and close interpersonal relationships. Needs for affiliation and power are usually closely related to success in management. The best managers have a high need for power and a low need for affiliation. In fact, a high-power motive is a requirement for a successful manager (Robbins & Judge, 2009).

Goal-Setting Theory

The practical application of motivation theories is focused on the principle: pay for performance. Motivation in the organization should strengthen when employees see that rewards are given according to performance criteria (Robbins & Judge, 2009, p. 226).

Recent research emphasized the connection between the concept of motivation and changes in the way work is structured. Research on workplace design and some alternative forms of workplace organization provide compelling evidence that the way elements in a job are organized can increase or decrease employee engagement (Robbins & Judge, 2009, p. 226).

For a more detailed insight into the theory of motivation consult; Buble, 2006, Rupčić 2018, Robbins & Coulter 2007, Robbins & Judge 2009, etc.

3.2. Results of empirical research on motivational factors and effects of work from home

For the management of the organization to be able to manage the motivation of the employees, it is necessary to identify the key motivations of the employees.

Motives need to be classified into groups of a certain degree of homogeneity (Gutić and Martiničić, 2018, p. 62): (1) motives of monetary incentives, (2) motives of stability and company image (3) motives of various employee benefits, (4) motives of the working environment. The management of the organization should determine the priorities after determining the motives and choose the model that is most acceptable to the employees. Satisfied employees significantly influence the increase in productivity and overall business efficiency.

Robbins & Judge cites the results of a survey conducted on motivational factors in which 1,500 employees participated (2009, p. 192). The five most important items that employees consider important are: (1) Learning and task selection, (2) Sliding working and free time, (3) Giving thanks, (4) More autonomy and authority in the workplace, (5) Time spent with the manager. The respondents stated that money is also important, but only after the five items mentioned above.

Below are examples of some companies that introduced work from home even before the pandemic and monitored its effects. For example, Merrill Lynch monitored the effects of the introduction of working from home on its 3,500 employees for a year and reported on the achieved effects. According to Robbins & Judge (2009), company productivity increased by up to 20 percent with workers who worked from home, they took 3.5 fewer sick days per year and worker turnover decreased by 6 percent.

Another example is the Boston company Putnam Investments, which at a certain point had a problem attracting new employees, but after the introduction of working from home, the number of applications increased by 20 percent. According to Robbins & Judge (2009), the management of the Putnam company estimated that workers who work from home, and they make up 12 percent of the total number of workers, have higher productivity and account for only a tenth of the attrition rate.

The author of the article published in the New York Times mentions other examples of companies that actively promote working from home, such as AT&T, IBM, American Express, Hewlett-Packard and several US government organizations.²⁰

On its website, Forbes²¹ lists the following companies that have successfully introduced work from home into their business: Siemens, Twitter, Square, Facebook. Siemens, as a leader in working from home with its 385,000 employees in more than 200 countries, is introducing a form of working from home in which employees are allowed to work from home several days a week. This was the result of a global survey in which Siemens workers said they wanted more flexibility at work. As stated by Siemens manager Roland Busch, the company has always had the option of working from home, but now they have raised that form of business to a higher level; by changing the business culture, and by changing the style of running the company, which will no longer be focused on the time spent at the workplace, but on the achieved results. According to the same source, working from home is functioning because the management recognized the satisfaction of workers when they do not have to travel to work and sit in offices but can do their work from the comfort of their own home. The effects of working from home can be viewed through the perspectives of different business functions; a) financial savings on renting space, b) strengthening the company's reputation in the public through the company's concern for the environment, enabling workers to work from home, c) human resources management provides workers with a better balance between private and business life, increases worker motivation, increases worker retention rate, i.e., decreases workforce turnover. In addition to all the above, companies that have switched to working from home can hire workers regardless of their location, which opens new opportunities when selecting and hiring new employees.

4. Empirical section

Work from home is becoming an increasingly widespread model due to available technology and accelerated digital transformation of businesses during the pandemic time. This requires changes in the management of human resources as well as certain organizational procedures. At the same time, it is necessary to maintain employee motivation at a high level to maintain the quality and productivity of the work performed.

Motivation is an indispensable factor in every human activity, it affects the work performance of employees and thus the company's results and its progress. Although the motivation and satisfaction of employees has been thoroughly investigated, it is not the case when it comes to the work from home conditions in Croatia. Given the lack of information on the effect of motivational factors when working from home, the initial assumption of the research was that employees react differently to certain motivational factors regarding their age and gender. The goal of the research was to gain insight into the employees' perception of the importance of various motivational factors, both when working from home and in the employer's premises. The purpose of the research is to contribute to a better understanding of employees' expectations and

²⁰ Glater, J.D. 9.5.2001. Telecommuting's Big Experiment. *New York Times*, Cl.

²¹ Kelly, J. 27.7.2020. *Siemens Says That 140,000 Of Its Employees Can Work From Anywhere*. Forbes.com. Preuzeto s: <https://www.forbes.com/sites/jackkelly/2020/07/27/siemens-says-that-140000-of-its-employees-can-work-from-anywhere/?sh=398a64d86a44>, 15.01.2021.

provide guidelines for management to maintain employees' motivation when work from home, which should consequently contribute to increasing productivity and business success in the age of digital transformation. Below are the results of the conducted primary research.

4.1. Research methodology

Quantitative, ad hoc research was conducted with the help of an electronic questionnaire. The survey was conducted in the period from December 2020 to January 2021 as a part of the final thesis.²² A convenient sample was used, considering that the questionnaire was distributed through social networks and within several companies. 116 respondents participated in the research, of which 112 respondents answered affirmatively to the elimination question - do they have experience with work from home. Below is a presentation of the most important research findings.

The questionnaire consisted of 16 questions classified into three groups: 1) general information about respondents, 2) about the perception of work from home and 3) about motivational factors when working from home and at the employer premises.

4.2. The results of the conducted research

The first part of the questionnaire related to general information about the respondents, such as their gender, age of the respondents, level of education completed, years of work experience, type of employment, and how much experience they had with work from home (table 1).

Table 1. Demographic data about respondents

<i>Sex</i>	(N=112)	(%)
M	63	56,25%
F	49	43,75%
<i>Age</i>		
18-29	41	36,61%
30-39	35	31,25%
40-49	21	18,75%
50-59	14	12,50%
60+ y.	1	0,89%
<i>Qualifications</i>		
Elementary education	0	0,00%
Secondary education/gymnasium	28	25,00%
Higher education	76	67,86%
Master of science/doctorate	9	8,04%
<i>Working experience (years)</i>		
Less than 1	8	7,14%
1-5	35	31,25%

²² Međimorec, B. 2021. *Upravljanje motivacijom radnika tijekom rada od kuće*. Zagreb: Sveučilište Vern, (final thesis).

6-10	18	16,07%
11-15	17	15,18%
More then 15	36	32,14%
<i>Type of employment relationship</i>		
Occasional Jobs	12	10,71%
Temporary agreement	80	71,43%
Permanent agreement	20	17,86%
<i>Experience work from home</i>		
Less than a month	16	14,29%
From 1 to 3 m.	27	24,11%
More than 3 and less than 6 m.	38	33,93%
More than 6 and less than 12 m.	19	16,96%
More than 12 months	12	10,71%

Source: Authors work

The second set of questions was related to the respondents' perception about work from home. Respondents could express their degree of agreement or disagreement with the offered statements with grades from 1 to 5. A Likert scale was used where grade 5 – “I agree completely”, and grade 1 – “I do not agree at all”). Results are shown in table 2.

Table 2. Respondents' perception about work from home

Statement	1	2	3	4	5	Mean
a) I miss my colleagues	29,46%	14,29%	33,04%	10,71%	12,50%	2,625
b) My focus on completing work tasks has decreased	13,39%	21,43%	26,79%	20,54%	17,86%	3,045
c) I have more freedom to manage my working hours	31,25%	24,11%	22,31%	14,29%	8,04%	2,411
d) I work more/longer from home than when I am in the company	9,82%	10,71%	19,64%	26,79%	33,04%	3,598
e) I have less expenses when work from home (e.g., cafeteria, meals, clothes, shoes...)	16,96%	16,96%	20,54%	19,64%	25,89%	3,205
f) I have higher expenses for IT equipment (e.g., headphones, laptop, scanner, printer...)	10,71%	12,50%	21,43%	20,54%	34,82%	3,589
g) I have more free time	39,29%	21,43%	22,32%	8,93%	8,04%	2,214

Source: Authors work

In the same group of questions, the respondents had to choose what they liked more; work from home, work at the employer's premises or do they like them equally. Slightly less than half (46.43%) of the respondents stated that they prefer work at the employer's premises, almost one third (32.14%) stated that they prefer work from home, and 21.43% of the respondents stated that they like both equally.

When asked what they liked most about their managers in dealing with them while working from home; the most common answers were: flexibility, trust, fairness, and communication, collegiality and understanding.

When asked what they miss the most in their supervisor's behavior while working from home, respondents most often cited a lack of social skills.

The third group of questions related to motivation when working from home (table 3) and work at the employer's premises (table 4). Respondents were offered statements with a description of certain motivational factors that they could grade from 1 to 5, whereby grade 1 was described by the statement "doesn't motivate me at all" and grade 5 "motivates me a lot".

Table 3. Employee motivation when work from home

Statements - to what extent does it motivate you:	1	2	3	4	5	Mean (rank)
a) additional time off, otherwise spent on travel/transportation	14,29%	14,29%	15,18%	31,25%	24,11%	3,357 (7)
b) greater independence and freedom when working from home	8,04%	12,50%	18,75%	30,36%	30,36%	3,607 (6)
c) transportation and hot meal expenses paid even though you work from home	30,36%	4,46%	28,57%	11,61%	23,21%	2,911 (9)
d) flexible working hours	10,71%	7,14%	15,18%	27,68%	39,29%	3,759 (4)
e) superior's involvement in solving problems	18,75%	11,61%	32,14%	18,75%	18,75%	3,089 (8)
f) superior's appreciation of your ideas and suggestions	8,93%	7,14%	25,00%	30,36%	28,57%	3,643 (5)
g) fair reward system	9,82%	6,25%	18,75%	24,11%	41,07%	3,982 (2)
h) fair division of work tasks	8,04%	10,71%	13,39%	27,68%	40,18%	3,813 (3)
i) correct communication with colleagues	6,25%	8,93%	13,39%	29,46%	41,96%	4,009 (1)

Source: Authors work

Table 4. Employee motivation when work at the employer's premises

Statements - to what extent does it motivate you:	1	2	3	4	5	Mean (rank)
a) availability of equipment and materials	9,82%	8,93%	20,54%	33,93%	26,79%	3,589 (6)
b) superior's involvement in solving problems	9,82%	10,71%	25,89%	27,68%	25,89%	3,491 (7)
c) superior's appreciation of your ideas and suggestions	4,46%	4,46%	15,18%	33,93%	41,96%	4,045 (4)
d) fair reward system	6,25%	5,36%	15,18%	24,11%	49,11%	4,045 (4)
e) correct communication with colleagues	4,46%	3,57%	15,18%	34,82%	41,96%	4,072 (3)
g) good atmosphere, organizational climate	4,46%	2,68%	11,61%	31,25%	50,00%	4,196 (1)
h) good working conditions and spaces	4,46%	1,79%	12,50%	34,82%	46,43%	4,170 (2)

Source: Authors work

After the presentation of the overall results, below is a presentation of the results according to the age and gender of the respondents, comparison, and discussion about them.

4.3. Interpretation of research results

The following table, (table 5), shows the results on the perception of work from home according to the age and gender of the respondents

The respondents' overall perception of work from home is that they; do not have more free time or greater freedom to manage working hours, that they work more/longer when working from home, and that they have increased expenses due to the purchase of IT equipment, etc. Male respondents generally rated their agreement with all proposed statements to a greater extent (higher scores) compared to female respondents. The lowest ratings for the statement "I have more free time" (that is, their disagreement with the stated statement) were given by female respondents and respondents in the age group over 50. The female respondents miss their colleagues the least, and they also feel that they have no more free time or greater freedom to manage their working hours when working from home.

Table 5. Perception about work from home - according to respondent's gender and age

Statements	Mean N=112	Female (N=49)	Male (N=63)	Age 18-29	Age 30-39	Age 40-49	Age 50+
a) I miss my colleagues	2,625	2,265	2,905	2,439	2,514	3,286	2,467
b) My focus on completing work tasks has decreased	3,045	2,878	3,175	3,049	3,029	3,095	3,000
c) I have more freedom to manage my working hours	2,411	2,163	2,603	2,439	2,200	2,571	2,600
d) I work more/longer from home than when I am in the company	3,598	3,490	3,683	3,756	3,571	3,429	3,467
e) I have less expenses when work from home (e.g., meals, clothes, shoes)	3,205	3,184	3,222	3,122	3,057	3,476	3,400
f) I have higher expenses for IT eq. (e.g., headphones, scanner, printer)	3,589	3,499	3,698	3,805	3,429	3,381	3,667
g) I have more free time	2,214	2,061	2,333	2,049	2,068	2,952	1,933

Source: Authors work

Table 6 shows the average weighted scores of respondents by gender and age on the question of whether they prefer work from home or at the employer's premises. When displaying the results and calculating the weighted average value, a weight 1 was assigned when choosing work at the employer's premises, a weight 3 when respondents answered equally, and a weight 5 was assigned when respondents choosing work from home. Based on the results presented in Table 6, it is evident that the average mean value calculated based on weighted responses is 2.714 (less than 3), which indicates that the average respondent prefers first work in the employer's premises or prefers both variants equally.

Table 6. PREFERENCE OF WORKING PLACE - ACCORDING TO THE GENDER AND AGE OF THE RESPONDENT

Whichever you like better:	Mean N = 112	Female (N=49)	Male (N=63)	Age 18-29	Age 30-39	Age 40-49	Age 50+
At employer premises (1) Equally (3) Work from home (5)	2,714	2,775	2,683	2,854	2,714	2,429	2,733

Source: Authors work

The average weighted value does not exceed 3 in any observed group of respondents, which can be interpreted that none of the observed groups (by gender or age) is extremely

favorable to working from home. Table 7 shows the average weighted scores of respondents according to education level and length of work from home experience.

Table 7. PREFERENCE OF WORKING PLACE - ACCORDING TO EDUCATION LEVEL AND LENGTH OF WORK FROM HOME EXPERIENCE

Whichever you like better:	Mean	Education level			Work from home experience (months)				
	N=112	Sec.	High.	Mr.sc. +	- 1 m.	1 – 3	3 - 6	6 – 12	12+ m.
At employer premises (1) Equally (3) Work from home (5)	2,714	3,429	2,493	2,333	2,625	1,889	2,211	3,632	4,833

Source: Authors work

It is visible that respondents with longer work from home experience prefer to stay at home and work from home (starting from 6 and more months of work from home experience).

Table 8 shows the average mean values according to the age and gender of the respondents. Based on the presented results, a ranking of individual motivational factors was carried out in the situation when respondents work from home.

Table 8. Employee motivation when work from home - according to gender and age

Statements - to what extent does it motivate you:	Mean N = 112	Female (N=49)	Male (N=63)	Age 18-29	Age 30-39	Age 40-49	Age 50+
a) additional time off, otherwise spent on travel/transportation	3,357 (7)	3,490	3,254	3,585	3,486	2,667	3,400
b) greater independence and freedom when work from home	3,607 (6)	3,633 (5)	3,587 (5)	3,512	3,800	3,429	3,667
c) transportation and hot meal expenses paid even though you work from home	2,911 (9)	2,980	2,857	3,220	2,800	2,381	3,067
d) flexible working hours	3,759 (4)	3,551 (6)	3,921 (2)	4,293	3,571	3,190	3,533
e) involvement of superiors in solving problems	3,089 (8)	3,082	3,095	3,195	3,086	2,810	3,200
f) appreciation of your ideas and suggestions by superiors	3,643 (5)	3,735 (4)	3,571 (6)	3,610	3,743	3,429	3,800
g) fair reward system	3,982 (2)	4,020 (2)	3,952 (1)	4,171	3,943	3,476	4,267
h) fair division of work tasks	3,813 (3)	4,020 (2)	3,651 (4)	3,854	3,829	3,524	4,067
i) correct communication with colleagues	4,009 (1)	4,265 (1)	3,810 (3)	4,073	3,971	3,857	4,133

Source: Authors work

In the first column, the motivational factors are ranked based on the total responses when it comes to the work from home: (1) correct communication with colleagues, (2) fair reward system, (3) fair division of work tasks, (4) flexible working hours and (5) respect for ideas and suggestions by superiors and (6) greater independence and freedom when work from home.

In the case of female respondents, the certain motivational factors were rated somewhat higher than the average, and the ranking of motivational factors is as follows: (1) correct communication with colleagues, (2) fair reward system and (2) fair division of work tasks, (4) appreciation of ideas and suggestions from superiors and (5) greater independence and freedom when work from home.

Male respondents valued only flexible working hours with a higher rating than the average. Thus, the ranking of motivational factors among male respondents is as follows; (1) fair

reward system, (2) flexible working hours, (3) correct communication with colleagues, (4) fair division of tasks, (5) greater independence and freedom, (6) respect for ideas and suggestions.

Regarding age groups, the youngest age group (18-29 years) rated the following motivational factors when working from home with higher scores than the average; (1) flexible working hours, (2) fair reward system, (3) correct communication with colleagues and (4) fair division of work tasks.

The oldest age group (50+) rated the following motivational factors when working from home as higher than the average: (1) fair reward system, (2) correct communication with colleagues, (3) fair division of work tasks and (4) respect ideas and suggestions from superiors.

It is interesting that the age group of respondents (40-49 years old) rated all the motivational factors with grades lower than average.

Table 9 shows the average mean values according to the age and gender of the respondents but for the motivational factors in the situation when work at employer premises. Based on the presented results, a ranking of individual motivational factors was carried out.

Table 9. Employee motivation when work at employer premises - according to the gender and age

Statements - to what extent does it motivate you:	Mean N = 112	Female (N=49)	Male (N=63)	Age 18-29	Age 30-39	Age 40-49	Age 50+
a) availability of work equipment and materials	3,589 (6)	3,612 (6)	3,571 (6)	3,634	3,543	3,476	3,733
b) the involvement of superiors in solving problems	3,491 (7)	3,612	3,397	3,610	3,600	3,143	3,400
c) appreciation of your ideas and suggestions by superiors	4,045 (4)	4,143 (3)	3,968 (4)	4,000	4,171	3,857	4,133
d) fair reward system	4,045 (4)	4,122 (4)	3,984 (3)	4,195	4,057	3,571	4,267
e) correct communication with colleagues	4,072 (3)	4,367 (2)	3,825 (5)	3,951	4,171	3,762	4,533
g) good atmosphere, organizational climate	4,196 (1)	4,449 (1)	4,000 (2)	4,244	4,257	3,857	4,400
h) good working conditions and spaces	4,170 (2)	4,036 (5)	4,036 (1)	4,220	4,143	4,095	4,200

Source: Authors work

Motivational factors when work in the employer's premises are also showed in the first column with the ranking according to mean values of total responses; (1) good atmosphere, org. climate, (2) good working conditions at the employer, (3) correct communication with colleagues, (4) fair reward system and (4) appreciation of ideas and suggestions by superiors.

It is interesting that when working in the employer's premises, the interviewees gave the highest marks (rank 1 and 2) to the good atmosphere and good working conditions, followed by the same motivational factors as with the work from home situation.

The female respondents ranked motivational factors in the work situation in the employer's premises: (1) good atmosphere and org. climate, (2) correct communication, (3) appreciation of ideas and suggestions by superiors, (4) fair reward system.

Male respondents ranked motivational factors somewhat differently compared to female respondents. For male respondents, the ranking of motivational factors when work in the employer's premises was: (1) good working conditions, (2) good atmosphere, (3) fair reward system, (4) appreciation of ideas, (5) correct communication with colleagues.

According to the age of the respondents, the youngest age group (18-29) ranks the motivational factors almost identically to the entire population, although with slightly higher ratings: (1) good atmosphere, (2) good working conditions and (3) fair reward system.

In the age group (40-49), the motivational factors were again rated lower than average, as was the case with work from home.

Here too, the age group (50+) stands out, giving the highest ratings for certain motivational factors, and their ranking was: (1) correct communication, (2) good atmosphere and org. climate, (3) a fair reward system, (4) good working conditions and (5) respect for suggestions and ideas from superiors.

Employee attitudes about work from home

Respondents differ in terms of whether they prefer to work at the employer premises or from home, therefore one of the recommendations for employers is to provide options for employees to choose, whenever possible.

Enabling work from home for those employees who prefer it can have a positive effect on employee satisfaction and motivation with minimal effort for the organization. Namely, the interviewees pointed out the advantages of working from home as personal comfort, less consumption, flexibility, fewer distractions, saving time on travel, i.e., all the above does not require additional investment by the employer, and can potentially improve the motivation and satisfaction of employees if they are enabled to work from home.

Respondents were also able to state what they lack when work from home, and the most common answers were interactions with colleagues, i.e., the social component, which could easily be compensated by a mixed model (a combination of work from home and with the employer premises). And finally, the employees expect some form of help with the procurement of equipment from the employers.

Furthermore, younger respondents, respondents with secondary education and those with longer experience of work from home chose to work from home to a greater extent than other groups of respondents, which indicates that work from home will become an increasingly popular and frequent work model i.e., unavoidable.

When working from home, employees observe the behavior of managers more critically. Employees appreciate and positively value flexibility, trust, fairness, communication and understanding of their superiors. However, they notice and resent the lack of managerial social skills.

Motivational factors when work from home

Flexible working hours, which is generally considered one of the biggest advantages of work from home model, according to the results of this research, comes only in fourth place and the involvement of superiors in solving problems in eighth place among the offered motivational factors.

Flexible working hours is ranked highest among the younger age group and ranked second among the male population of respondents, while among other groups was ranked lower.

Low rank of the involvement of superiors in solving problems could be a consequence of a system in which it is normal for superiors to help subordinates when problems arise, so such situations do not create positive or negative feelings that would further result in motivation.

On the other hand, the most important motivational factors when work from home are correct communication with colleagues, and a fair system of rewards and distribution of work, according to the answers of all respondents, especially among the female population, young people, and respondents over 50 years of age.

Appreciation of ideas, although rated relatively high, comes as the fifth ranked factor, but its importance was rated higher than average by the female population and the older age group.

The reason for this may be that women and the elderly are more exposed to injustice and disrespect for their ideas, but this would be worth further research.

All the above can be considered a recommendation to the management on what to pay attention to in order to increase the motivation and satisfaction of different employees' groups when working from home.

Motivational factors when work in the employer's premises

The most important motivational factors when work in the employer's premises, considering the responses of all respondents, were good atmosphere, organizational climate, good working conditions, correct communication with colleagues, a fair reward system and respect for ideas and suggestions by superiors.

However, when looking at individual demographic groups, differences in ranking can be observed, for example, while correct communication is second most important to the female population, it appears only in fifth place among male respondents. Furthermore, male respondents rank good working conditions in first place, while the same among female respondents appear in fifth place.

A good atmosphere, good working conditions and a fair reward system are equally important to young people. The older population most values correct communication, a good atmosphere and organizational climate, a fair reward system, good working conditions and respect for suggestions and ideas from superiors.

It is interesting that the importance of respecting ideas was assessed differently when working from home and when working at the employer's premises.

When working from home, the appreciation of ideas received an average score of 3.64 (the female population, over 50 and the population aged 30 to 39 gave a higher than average score).

When working in the employer's premises, the appreciation of ideas was rated with an average rating of 4.04 (while the ratings were higher than the average given by the same population; women, over 50, and respondents aged 30 to 39).

Recommendations for practice

When it comes to respondents with a relatively short experience of working from home (less than 6 months), management should provide the necessary instructions to make it easier for employees to navigate, greater involvement and availability in the initial period, all with the aim of motivating employees when working from home in the initial period.

Given that employees do not have the feeling of more free time, better organization of work with clear instructions could influence the increase of employee productivity, and additional free time because of increased productivity could be motivating for employees.

Management should also pay more attention to personal development and education, with special emphasis on the improvement of social skills, because their lack is easily noticed and resented by employees.

Management should pay special attention to a fair reward system, which stands out as one of the most important motivational factors among respondents of all demographic groups. This could be achieved by monitoring performance per employee, with transparent announcements of results, and with a matching reward system.

Furthermore, management should also apply in practice other motivational factors that have been detected as important to employees and be flexible according to the expectations of different demographic groups.

Ultimately, every organization should continuously monitor the motivation and satisfaction of its employees, considering the specifics of the jobs, business conditions and employee structure.

Research limitations and recommendations for future research

Considering the applied research method, i.e., the type and size of the sample used, the presented results cannot be considered representative of the Croatian population but should be viewed as indicative.

Also, considering the passage of time (from the conducted research to the publication of the results), it should be considered that probably the experience, and thus also the attitudes of employees towards work from home, have somewhat evolved. On the other hand, it is to be expected that a good part of the management in organizations has adapted to the needs of the employees, considering the differences in the preferences of the employees towards work from home or at the employer's premises.

Accordingly, the recommendation would be to repeat the research on a larger and representative sample of respondents.

5. Conclusion

Management can be seen as a process of shaping and maintaining an environment in which employees together in groups achieve certain company goals. Managers are expected to care for employees and create a stimulating organizational climate and work environment.

Motivation is generally manifested as any influence that causes, directs, and maintains the aimed behavior of people. Numerous theories of motivation are known, and they are frequently grouped into early and contemporary. Lately, some authors advocate a holistic, or integrated, perspective when it comes to contemporary theories of motivation.

Through various empirical studies, it has been confirmed that the application of appropriate motivational factors has a positive effect on the behavior and attitude of employees towards work, increases work performance and affects employee satisfaction when performing work.

Regarding ubiquitous digitization, work from home is becoming an increasingly widespread and frequent form of work, and accordingly, it is necessary to pay due attention to the study of motivational factors among employees when working from home.

The paper presents the results of the conducted research on motivational factors among employees, both when working from home and at the employer's premises.

According to the evaluations of respondents in the situation of work from home, the most important motivational factors were: (1) correct communication with colleagues, (2) fair reward system, (3) fair division of work tasks, (4) flexible working hours and (5) appreciation of ideas and suggestions by superiors.

The respondents also evaluated the motivational factors when work in the employer's premises, and the results were: (1) good atmosphere, organizational climate, (2) good working conditions at the employer, (3) correct communication with colleagues, (4) fair reward system and (4) appreciation of ideas and suggestions by superiors.

The presented results showed that, regardless of the work model, a good working atmosphere and organizational climate, communication with colleagues, a fair reward system and a fair division of work, as well as respect for ideas and suggestions by superiors are extremely important to employees. It should be noted that when ranking motivational factors, differences were observed depending on the gender and age of the respondents.

Right managing of employee motivation enables the realization of their maximum potential, where a fair reward system and a fair division of work tasks are extremely important. Expectations from the modern managers are to listen to and acknowledge the suggestions and ideas of all employees, especially women and older employees. Also, today's managers are expected to continuously work on acquiring new knowledge and skills (with special emphasis on social skills), and to continuously monitor employee satisfaction and pay due attention to the application of appropriate motivational factors.

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BEHAVIOR AND SOCIAL DISTANCING IN TRANSPORT DURING COVID-19. A STUDY FROM KOSOVO

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Abstract

This study aims to make a contribution to the field of transport for passenger behavior during the COVID-19 period. Data were collected through 179 questionnaires, while the results were generated by STATA software. Data were collected through an online survey. From the generated results we have ascertained that depending on the heavy traffic the passengers choose the mode of transport. Second, we assumed that if public transport passengers had a free travel card for a month or four weeks, this would reduce travel problems and continue to use public transport in the future. Third, an increase in declining public interest in public transportation reduces fears of COVID-19 infection. Fourth, no correlation was found between the variables of exemption from payment of persons with social assistance with the increase and favoring of public transport. Finally, gas station membership cards are seen to have influenced people's behavior in the mode of transportation. Our results show concretely that the pandemic has influenced the choices of travelers to travel, and their stimulation to use public transport can be done with positive effects to turn it into stimulus in future decisions.

JEL: L910, L920, R4, P25

Keywords: Covid-19, behavior, social distancing, transport, passenger

1. Introduction

Recent research suggests an interest in the idea of mixing economics with psychology to come up with a new term behavioral economics according to Thaler (2016). Attitudes and perceptions are seen as a determining factor in travelers' choices through social incentives that shape the shifts they make and by changing travel choices including environmental factors to save electricity, water, or recycling (Riggs, 2020). Mattauch (2016), considers that in order to be able to understand transport behaviors, we must rely on behavioral economics and the psychological part, first by analyzing which preferences are adequate to make decisions about mobility, and second if transport policies represent satisfactory preferences or taking into account behavioral effects. Added value in this context is given by (Metcalfe, 2012), in a work where he adds that in addition, to stimuli and norms, a unique role in the role of behavior is played by commitment and ego.

Table 1. Previous considerations

<i>Previous findings</i>	<i>Limitations</i>	<i>Further hypotheses</i>	<i>Authors</i>
Air travel causes 54-75% of carbon emissions, while bus and rail travel causes only 13%.	Any relationship between mode of transport and people's preferences.	h1: Depending on the heavy traffic, people choose the mode of transport to get to work.	UNWTO, 2019
Bi-weekly travel card (free travel card) or doubling it as a four-week free travel card, is not a strong enough incentive (because there is a big drop in usage after the free period is completed) to change behavior or in this case to promote public transport through 'gift cards.	Not a strong incentive after the free period is completed.	h2: The free one-month bus travel card would change people's behavior to choose the mode of transport. h3: People's attitude towards public transport would be positive even after using incentives.	Gravert, 2021
Work from home, Social distance, and Less safety in public transport.	The lack of psychological considerations in order to treat transport decisions.	h4: Fear of being infected with COVID-19 has reduced people's interest in public transport.	Beck, 2020; Wielechowski, 2020; Dong, 2021
Moral incentives increase donations to charity by approx.44%.	Moral incentives in transport.	h5: Exemption from payment of special categories of persons for the payment of travel tickets increase people's interest in using public transport.	Pol et al., 2017

Source: Authors' review

We have perceived to see if there is any relationship or how the COVID-19 pandemic has influenced current passenger decisions. With all due respect to authors in the field of behavioral economics, to further shape current work and ideas, we will use their results to build input in this area.

2. Literature review

2.1 Green Nudges

Relying on a large number of literature reviews related to environmental policies, in particular, as well-informed about behavioral economics, have influenced the development of the 'green nudge' considering it as a new tool to encourage consumers to react positively to the environment (Croson, 2014). Many of the impulses are designed to make it easier for people through their choices, making them clearer in what they can understand, pushing them to overcome the problem, and conducting direct investigations into what they choose (Sunstein, 2017). Day by day, firms are actively using behavior-based strategies trying to control buyer behavior in advance (Thaler, 2018). There are at least three important warnings that prove how 'green nudges' are promising innovative policies in promoting environmentally influenced behavior: first, green incentives are seen as quite restrictive concerning behavior; second, they are seen as complementary rather than substitutes for the traditional mass; finally, the key step in any environmental policy should be to be well informed that these nudges should be organized transparently for the behavior to be effective and ethical (Schubert, 2017).

On the one hand, Cosic (2018), has studied environmental behavior in a group of students by assigning a task to throw plastic cups inside two baskets, one large and the other smaller (which can be recycled). Without thinking much about whether their glasses could be recycled, they threw the plastic cups in the biggest bin because they had it easier, but here we are dealing with a level of ignorance, not paying attention to recycling, and this is related to a degree of negligence. Here the 'nudges' have stood in the direction of raising awareness of the recycling process and not price intervention. Moreover, Green Nudges, according to Brick (2017), are also considered effective mechanisms for reducing water and energy consumption in homes in Cape Town, South Africa. Here according to the above mechanisms media appeals are used to motivate consumers in conserving water consumption. What is important to note here is that the effects of treatment turned out to vary according to consumer income, as wealthy households turned out to have more consideration for social incentives for the public good compared to the less affluent strata.

On the other hand, compared to Cosic (2018), the results of the World Economic Forum have considered plastic as one of the main drivers of climate change and that green incentives can be included in a marketing strategy to reduce the consumption of natural resources with non-ecological packaging and that these incentives are not considered to be a marketing tool (Mueller, 2020). The transport sector includes air, cars, and railways, where according to the UNWTO (2019), the tourism sector is responsible for 4.6% of global warming, resulting in up to 5% of all global carbon dioxide emissions. Hilton (2014), studied air and road transport over a certain distance in France, so the forecasts stipulate that if state policy instruments impose a higher bonus-malus tax on road transport, they will tend to choose the (air) option. Air travel causes 54-75% of carbon emissions, while bus and rail travel causes only 13% (UNWTO, 2019). Related to green nudges we have strongly raised our first research question RQ1: Does heavy traffic affect the choice of mode of travel to work?

h1: Depending on the heavy traffic, people choose the mode of transport to get to work.

In a recent article by (Alpizar, 2020), the results orient the nudges in an interesting way starting from understanding the behavior of less important individuals to understanding the group behavior, then the part of the behavioral interventions relies solely on providing information, as well as pollution from significant losses and in this case from 'plastic', studies on current policies are lacking. Another support is considered to be the "green energy" of renewable sources, through the provision of information (an economic and effective mechanism) regarding cost, and its efficiency thus influencing the voluntary preferences of consumers (Williams, 2022). Sunstein

(2018), has found it very interesting to note how in some countries the 'push' has been influenced, hence in Belgium, the study has presented the existence of a multitude of policies that value incentives, moreover, Denmark as a 'careful push', in addition, Germany as the 'principled host nation'. Finally, South Korea as an 'enthusiastic push', comes as a result of trust in government institutions. Of particular interest is the role of 'social norm nudges' as part of environmental policy, and in the field of energy economy towards the part of recycling, according to the responses of social respondents, incentives have increased their willingness to increase the level of recycling and by not consider it as something monotone (Czajkowski, 2019). Social push (SMS on how to improve the way of saving) in a commercial bank in the Netherlands has influenced that the impact of the nudge has pushed families to take steps in changing the way of saving (Dur, 2021).

2.2 Public Transport

Behavioral stimuli as interventions have been suggested as a possible mechanism in trying to change individual travel behavior, hence by offering a bi-weekly travel card (free travel card) or doubling it as a four-week free travel card, it is worth noting the comparison between price and push or (behavioral interventions), from which it can be understood whether a stimulus is a cost-effective intervention or pricing instrument will have a greater effect on the behavior and subsequent impact of the intervention that there was not a strong enough incentive (because there is a big drop in usage after the free period completed), to change behavior or in this case to promote public transport through 'gift cards' (Gravert, 2021). With all the respect to the author above, we can form our second research question RQ2: Would 'gift cards' change people's attitude towards public transport?

h2: The free one-month bus travel card would change people's behavior to choose the mode of transport.

But, what if this incentive will continue even after the number of people has accepted the gift cards or not? And, in order to support the continuum we have pointed out the third research question that supports the previous hypothesis. RQ3: Would the same 'gift cards' promote public transport even after the push?

h3: People's attitude towards public transport would be positive even after using incentives.

Road infrastructure in tourism reduces the duration of travel by owning long distances, so the destination becomes easier and more attractive to access (Mazrekaj, 2020). According to Kryeziu (2014), through various sources such as the department of Kosovo roads and Kosovo airport, the factors that affect the increase in the number of passengers in Kosovo are analyzed as follows. First, the increase of asphaltting of roads in villages. Second, is the increase in the number of railway tracks. Finally, the increase in the number of aircraft. Road construction and expansion of the road network in the Kosovo network depends on physical-geographical and socio-economic factors, where Kosovo ranks among the countries with medium stages of road development, where traffic is considered to be positively related to tourism (Ramadani & Tomor, 2019).

2.2.1 Public Transport during COVID-19

The public health crisis has turned out to have affected the psychological side of people, specifically passengers, taking into account state measures to prevent its spread. In research or study conducted in eight cities of China, the results showed that the feeling of security was related to their satisfaction with public transportation and hereby defining some of the psychological conditions that turn out to have influenced. Strict state measures hurt public transport and passengers pay more attention to the information in pandemic conditions and have shown less

safety and interest in public transport (Dong, 2021). According to Beck (2020), COVID-19 has been shown to have an effect on work from home, but also on the road or generally traveling, so as the number of employees working from home decreases, the number of employees traveling to work decreases, while restrictions alleviate results increased car travel is observed and other factors remain unchanged (*ceteris paribus*). The results of a study conducted in Poland during the period March 2 to July 19, 2020, show that the COVID-19 pandemic has contributed to the increase in mobility restrictions and social distance in public transport (Wielechowski, 2020).

With respect to the scholars above, it is well seen that the pandemic has affected the way of traveling or saying better and has decreased the number of employees traveling to the main target or at work (Beck, 2020; Wielechowski, 2020; Dong, 2021). One more study considers that public transport perceptions have shifted as a vector of virus transmission and also suggests that programs should be built to monitor current and future pandemics respectively (Gutiérrez, 2020). The pandemic is seen to have had an impact on local and international transport. Hence, the Government of the United Kingdom during the pandemic period has set policies to enable the continuation of functions during COVID-19, through financial support for the maintenance of transport services given the fear of frequenting this type of transport (Vickerman, 2021). Hence, we can lay the third research question RQ4: Has the COVID-19 pandemic affected people's preferences for public transport?

h4: Fear of being infected with COVID-19 has reduced people's interest in public transport.

Protection policies against the pandemic have also been taken in Germany, but in terms of transport there are restrictions and blockages, but not in personal cars - where attendance seems to have increased (Eisenmann, 2021). The COVID-19 crisis is seen to have affected the mode of passenger transport but also the number of passengers who have used public transport to return to normalcy, public transport planning policies had to be drafted and these have meant a reduction of services (Gkiotsalitis, 2020). Data from Athens, Greece, also studied the behavior of passengers in using public transport, where it was found that employees and passengers who used private vehicles are less likely to use public transport after the crisis similar to people who were willing to use safeguards during a pandemic are less likely to use public transportation (Kopsidas, 2021). According to the data collected from the traffic counters and traffic control cameras, facts have been collected on how the daily traffic has been reduced, thus estimating the nitrogen dioxide emissions and the traffic rate, including accidents. In this analysis, there is a decrease in mobility by 76%, thus affecting the decrease of nitrogen dioxide emissions to 60%, reducing the rate of traffic accidents (Aloi, 2020).

2.3 Moral Nudges

Mechanisms to promote pro-social choices, so-called moral incentives, are important to allow for a free change in people's behavior by significantly changing the economy (Capraro et al., 2019). An important part of moral education is seen to be the ethics of the subject in this case that the well-educated person is more structured and more approachable (Engelen, 2018). Social motivators are challenged by coherence and autonomy, and these objections can be easily addressed if they use appropriate psychological and social mechanisms and stimuli to assess behavior (Nagatsu, 2015). It is not easy to find the mechanism to promote pro-social behavior, through economic games in this article to assess the morality of an action and so based on the results it turns out that moral incentives increase donations to charity by about 44% (Pol et al., 2017).

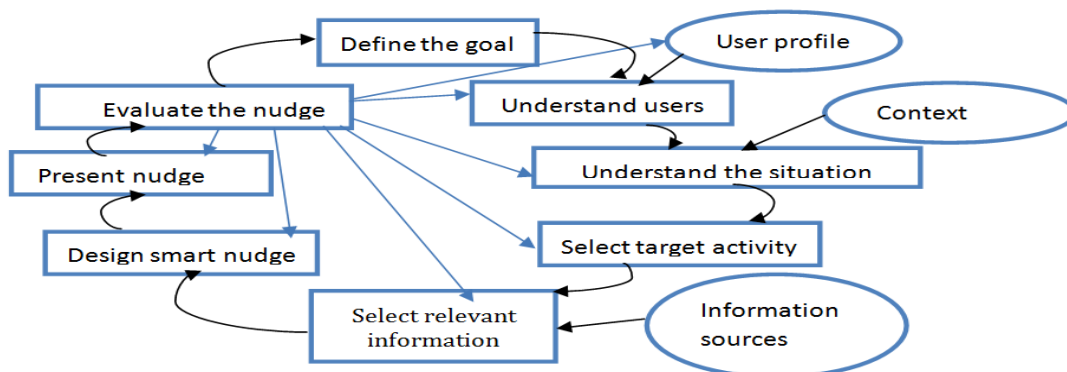
Based on the digital nudge of the designing process that is inspired by (Schneider, 2018), are presented six nudges (Figure, 1) that best present a guideline for selecting and implementing smart nudges as follows: The first step is presented by defining one goal that may be to increase

sales on an energy platform, or government tax practices are tax relief for citizens or for special occasions to stimulate economic recovery and thus influence the direction to be used. The second step is defined as user understanding, where decision making is seen to be susceptible to bias, the big rule can be used to facilitate decision making in order to reduce the abundance or psychological effects that may unethically affect decision making. In the third step, the propulsion must be designed, through mechanisms to direct the propulsion in the direction designed by a particular architecture that is thought to have an impact and its implementation through certain elements or design. The final step is to test the premeditated push-through flexible designs and quite easy to test, especially in the field of the internet, where the uniqueness of decision-making processes is quite pronounced with a variety of colors. In defining the above steps we conclude that goals need to be set, users understand, impulses designed and tested, and this cycle is assisted by designers understanding users to minimize or maximize effects. To support the above authors and in trying to give a modest contribution in part of moral nudges the fourth research question stands as RQ5: Can the release of certain individuals, such as those with social assistance, be affected as a way of stimulating the use of public transport?

h5: Exemption from payment of special categories of persons for the payment of travel tickets increases people's interest in using public transport.

The automatic part of moral development can have an impact if it focuses on the psychological capacity to change cognitive behaviors (Klincewicz, 2019). For a balanced mix between synergy policies, criteria such as cost-benefit analysis and feasibility should be used, with recent evidence suggesting that raising public awareness affects the extent to which acceptance of a more effective emission tax on carbon is declining (Drews, 2020). Motivation theory considers that it can be applied in different areas, but the main idea is to try to change the behavior ethically and harmlessly towards individuals during climate change to encourage behaviors without forcing them to make decisions (Cooper, 2017). The renunciation of personal gain for an abstract benefit is known as green consumerism, while through external and internal factors to achieve in some form the architecture of the way of defining and structuring beliefs and impressions that influence decision-making as well as the orientation of behavior towards the best possible decision (Sachdeva, 2015). The last research question is related to RQ6: Do membership cards at gas stations influence the interest in choosing the mode of travel? h6: Membership in gas stations has influenced the interest in choosing the mode of travel. Motivation theory considers that it can be applied in different areas, but the main idea is to try to change the behavior ethically and harmlessly towards individuals during climate change to encourage behaviors without forcing them to make decisions (Cooper, 2017).

Figure 1. Designing a Smart Nudge



Source: (Schneider, 2018), retrieved from <https://doi.org/10.3390/technologies7020045>

The renunciation of personal gain for an abstract benefit is known as green consumerism, while through external and internal factors to achieve in some form the architecture of the way of defining and structuring beliefs and impressions that influence decision-making as well as the orientation of behavior towards the best possible decision (Sachdeva, 2015).

3. Methodology

This study was conducted in almost all cities of Kosovo, with a sample of 179 respondents, focusing on persons currently engaged in the public or private sector. The questionnaires consisted of 21 questions, divided into three parts of questions. The first four questions of the survey present demographic data, such as the municipality, gender, age, education, and labor sector. The second section consists of eight questions that present in-depth the role of public transport. Four questions in this section are formed with the Likert scale, where 1 represents "strongly disagree" and 5 represents "strongly agree", or 1 "very rarely" and 5 "very often". The last questions relate to the COVID - 19 pandemic and include 3 questions on the Likert scale, and other questions to better understand the psychological reasons why there is less public transport attendance during the pandemic. The questionnaires were distributed through Google Drive using the representative sample. The significance of the variables is generated by the statistical software STATA, using descriptive statistics, regression, and correlation analysis.

4. Findings and discussions

As mentioned above, the first part of the questions represent descriptive statistics of demographic data, but here excluding the municipality where they belong because there are presented more than 9 municipalities in Kosovo, hence we involved variables such as gender, age, education, and labor sector as well. The data are presented below. Based on descriptive statistics of age, gender, education, and labor sector, we can see the percentages of respondents as part of the research. Looking at the (ASK, 2019) we can notice the degree of participation of the gender factor in the labor market where (59.7%) are men and only (21.1%) are women.

Table 2. Demographic questions presented as descriptive statistics

<i>Name of variables</i>	<i>Category</i>	<i>Frequencies</i>	<i>Percentage</i>
Gender	<i>Female</i>	70	39.11
	<i>Male</i>	109	60.89
Age	<i>18-20</i>	4	2.23
	<i>21-30</i>	70	39.11
	<i>31-40</i>	69	38.55
	<i>41-50</i>	24	13.41
	<i>51-60</i>	12	6.70
Education	<i>Middle school</i>	3	1.68
	<i>High School</i>	24	13.41
	<i>Bachelor</i>	88	49.16
	<i>Master</i>	59	32.96
	<i>Ph.D.</i>	4	2.23
	<i>Post-Doc</i>	1	0.56
Labor sector	<i>Public</i>	64	35.75
	<i>Private</i>	115	64.25

Source: Author's results according to STATA descriptive

Related to this statistic, in our study it turns out that we have higher participation of males in the labor market compared to females. Hence, the gender of the respondents where we see that only 70 or (39.11%) of the respondents are female, while the rest are male (109) with the participation of (60.89). This results from the fact that we have male-dominated participation in the labor market. We also have a dominance of 21-30 years old (39.11%) who are employed in the labor market and are immediately followed by 31-40 years old with participation (38.55%). The smallest participation in the labor market turned out to be aged 18-20 (2.23%). A very valuable fact is the part of education where the lowest participation of respondents is in secondary and post-documentary education, while the majority with basic or bachelor studies 88 of them or (49.16%). Finally, it is interesting to see that 115 (64.25%) of the respondents turned out to be employees in a private institution, while a very small number (35.75%) were employed in the public sector.

4.1 Hypotheses significance

The hypotheses from the beginning of the paper have been raised to present the lack of previous literature review and to determine the transport topic in relationship with the people's preferences. With all respect to the authors above, the literature review has served chronologically to the present paper to be fulfilled with the necessary literature, to make comparisons, and to insert new aspects in order to give a modest contribution in the aspect of transport and behavioral distance. Using STATA software we have statistically tested the hypotheses and presented their correlation. The first hypothesis has been accepted because the significance seems to be inside of the 5% of probability or is equal to (0.010), where $P > t$. Also, the second, third, and fourth hypotheses have been accepted, hence, are inside the 5% of significance. The fifth alternative hypothesis has not been under consideration because we have accepted the null hypothesis, as we can notice that the t value is higher than 0.05, therefore we reject the alternative one. The last hypothesis value is lower than 0.05 and it has been accepted.

Table 3. Cronbach's alpha analysis for all of the variables

Reliability statistics		
Cronbach's alpha	Scale reliability coefficient	N of items
	0.7108	7

Source: Own calculations

The value of the reliability coefficient is higher than 70%, and according to Taber (2018), if Cronbach's alpha value is equal to 0.7 or higher the results are acceptable and we can continue with further statistical considerations.

Table 4. Hypotheses significance

Hypotheses	P>t	Results
h1: Depending on the heavy traffic, people choose the mode of transport to get to work.	0.010	<i>Significant</i>
h2: A free one-month bus travel card would decrease people's difficulties to travel.	0.000	<i>Significant</i>
h3: People's attitude towards public transport would be attached even after using incentives.	0.000	<i>Significant</i>
h4: Fear of being infected with COVID-19 has reduced people's interest in public transport.	0.000	<i>Significant</i>
h5: Exemption from payment of special categories of persons for the payment of travel tickets increases the interest of people to use public transport.	0.411	<i>InSignificant</i>
h6: Membership in gas stations has influenced the interest in choosing the mode of travel.	0.002	<i>Significant</i>

Source: Own results

Table 4 contains the correlations between the dependent and independent variables related to our hypotheses. Since 5 of them turned out to be significant and 1 of them non-significant, we have raised our need to see the correlations between the variables in order to find out the relationship between them and to identify how strong the relation is. The first hypothesis has a positive correlation, which means that if the traffic density increases per unit for example per kg / m², the mode of influence on the choice of transport also increases by 0.1933. In the second hypothesis, the correlation turned out to be negative, because for a cheaper card to travel the travel difficulties would decrease by 0.4557. The third hypothesis has a positive correlation between the way of stimulation and gift cards for the future. The fourth hypothesis is also of particular importance because it estimates that an increase in reducing people's interest in public transportation reduces the fear of infection by 0.2486. As we can see from the respondents that a number of people go to work by their cars, so here we can consider only people who have used public transport for their needs. The fifth hypothesis turned out to be irrelevant with a negative correlation. While the dependent and independent variables in the last hypothesis turned out to have a positive correlation.

	WW	FI	AST	GMm	HT	GC	ST	LPT	DF
WWork	1.0000								
FearInfec	0.1611	1.0000							
Asistence	0.0878	0.0861	1.0000						
GasMemb	0.3072	0.1215	0.0365	1.0000					
Heavytraffic	0.1933	0.0428	0.0822	0.1179	1.0000				
GiftC	-0.3619	-0.2998	-0.0889	-0.1485	-0.1543	1.0000			
Stimul	-0.3388	-0.2449	-0.0685	-0.1553	-0.1597	0.7842	1.0000		
LessPt	-0.6117	-0.2486	-0.0942	-0.2599	-0.1059	0.4434	0.4147	1.0000	
Diffic	0.3787	0.0894	0.0350	0.3383	0.0350	-0.4557	-0.4885	-0.3595	1.0000

5. Conclusions and limitations for future research

Based on literature review and past findings, this research aims to make a modest contribution to the field of passenger transport and behavior during the COVID-19 period. Through the results, we conclude that the heavy traffic and the selection of passengers for the mode of transport are of positive importance. Next, we assumed that if public transport passengers were to have a free travel card for a month or four weeks, this would affect passenger preferences and they would continue to use public transport in the future. It is interesting that if we have an increase in declining people's interest in public transport, the fear of being infected with the virus decreases. On the other hand, there was no correlation between the variables of exemption from payment of persons with social assistance with the increase and favoring of public transport. Finally, gas station membership cards are seen to have influenced people's behavior in the mode of transportation. Finally, this study has some limitations. To conceive the great importance of our results a comparison must be made in the field of transport before, during, and after the pandemic. And this will give us a comparative and more accurate analysis of the preferences of transport travelers during the pandemic.

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THE IMPACT OF CHANGES IN THE MARKET CAPITALIZATION OF COMPANIES ON THE VALUE OF GDP - THE CASE OF BOSNIA AND HERZEGOVINA

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Abstract

The main goal of this paper is to assess the impact of market capitalization on stock exchanges in Bosnia and Herzegovina on GDP trends (as an indicator of economic development). The data used in this paper were included in the model of statistical analysis and obtaining indicators of the relative importance of the influence of one variable on another. In this sense, time series analysis will be used. The time consistency of the data will be checked with a vector autoregression model in order to determine the connection of variables over time, that is, the influence of market capitalization on the movement of GDP. The given analysis will attempt to establish the connection between the given variables and evaluate the strength and importance of the given correlation.

Keywords: Market capitalization, GDP growth, Causality, VAR.

JEL classification: F47,G12,G17

1. Introduction

The market capitalization to GDP ratio refers to a metric used to assess whether a given market is accurately valued in line with historical averages. The ratio can be calculated for a specific market, such as a specific stock market, or it can even be applied to the global market. It is calculated by dividing the stock market capitalization of an economy by the gross domestic product of that area.

The term was popularized by one of the world's leading investors and one of the richest people in the world, Warren Buffet, and later became known as the "Buffet Indicator". It is claimed to be the best measure for determining the value of a given security at any given time. The ratio of stock market capitalization to GDP is expressed as a ratio or percentage and is calculated using the following formula:

$$\text{Market capitalization to GDP} = (\text{SMC}/\text{GDP}) * 100$$

Where is:

SMC – Market Capitalization

GDP – Gross domestic product

For example, the total value of all publicly traded stocks in the US can be calculated using the Wilshire 5000 Total Market Index. The index represents the total value of all stocks on the US financial markets. The GDP number used is the one reported on a quarterly basis; however, it can also be on an annual basis.

In this paper, the relationship between stock market capitalization and economic growth in Bosnia and Herzegovina will be investigated using appropriate statistical tools and considering previous research on this topic. The rest of the paper is divided as follows: Part 2 deals with the explanation of the ratio of market capitalization to GDP and the influencing factors. Part 3 provides the literature framework and Emirati research. Part 4 talks about the relationship between market capitalization and GDP in Bosnia and Herzegovina. Part 5 covers data and methodology. Finally, Section 6 provides the conclusions of this study.

2. Ratio of market capitalization to GDP and influencing factors

The ratio of market capitalization to GDP is a technical measure of the value of all listed stocks of all companies in a given economy divided by the gross domestic product of that economy. The ratio makes it possible to compare the value of the shares of an economy, on average, with the value of the total output that that economy produces in each period of time. This ratio gives the percentage of GDP that is representative of the value of the stock market.

Generally speaking, in a situation where the ratio is greater than 1, i.e. 100%, it implies that the market is currently overvalued. On the other hand, when the coefficient is less than 0.5 or 50%, it shows that the state of that economy is underestimated. The historical average of the American market in the period 1975-2020 is close to 80%. In 2020, a peak of over 190% was reached.

In a situation where the ratio falls between 0.5 and 0.75, the market is said to be weak or modestly undervalued at the moment. Finally, if the ratio is in the range of 0.9 to 1.15, i.e. 90% to 115%, it is considered to be a modest overvaluation of the market.

The value of the ratio of market capitalization to GDP is influenced by the share of companies that are public in relation to the number of private companies in the economy. Moreover, the initial public offering (IPO) trends of new public companies also affect the value of the ratio.

Let's consider a hypothetical example where the total value of the German stock market in 2020 was 2,284.11 billion euros, while the nominal GDP of the country was 4,222 billion euros. The ratio of market capitalization to GDP would be approximately 55%. This would mean that the stock market is currently slightly undervalued.

Interest rates, overall profitability and market valuation are the main indicators that influence the calculation of the mentioned ratio. Namely, if the government rate of securities rises, the prices of all other investments must be adjusted downwards, to the level of their realistically expected rates of return. On the other hand, if government interest rates fall, that act pushes up the prices of all other investments.

In the long term, corporate profitability tends to ensure a long-term trend. During recessions, corporate profit margins decrease, and during periods of economic growth, corporate profit margins increase. However, the long-term growth of the company's profitability is close to the long-term economic growth and has a certain positive correlation with it.

In the long term, stock market valuation returns to the mean value. A higher current valuation certainly correlates with lower long-term returns in the future. On the other hand, a lower level of current valuation correlates with a higher long-term return.

To understand the underlying logic of this we must understand the economic cycle of the country. The assumption is that the economy is based on consumption, and individuals must produce in order to consume. Corporations generate revenue and profit from consumption, and profitability itself will eventually be reflected in the stock market. Thus, GDP, which reflects the total value of production, is the basic driving force behind corporate profits as well as total market capitalization. A deeper analysis requires the assets of the Central Bank, i.e. the state of assets, liabilities and capital of the country's banking system. This is especially important for economies that have significant amounts of government and central bank debt securities.

3. Literature review and empirical research

Many studies show a functional and direct connection between changes in market capitalization and the financial sector and changes in GDP growth. Research conducted by Levine and Zervos (1998) indicates that there is a significant relationship between various factors and economic growth. So the liquidity of the stock market and the development of the banking sector have a positive correlation with current and future economic growth and capital accumulation.

Schumpeter (1954) states that the financial sector plays a key role in financing investment, innovation and technological progress, and in this sense the financial sector contributes to economic growth. In this sense, Goldsmith (1969) finds a positive relationship between financial development and economic growth through a cross-sectional analysis on a sample of 35 countries. Levine and others, et al. (2000) in their paper analyzed a sample of 77 countries and found that there is causality in the direction from financial development to economic growth. In addition, these authors found a positive correlation between financial development and economic growth in the long run. However, in countries affected by the financial crisis, a negative relationship remains in the short term. The functioning of the financial system and economic growth of the country is analyzed again by Levine (2004). Namely, the author studies the causality between the financial sector and economic activity. He also believes that more developed financial systems help reduce external financial constraints that firms face; since it is a kind of mechanism through which financial development affects economic growth.

Namely, another study conducted by A.-Bujaria, F. Venegas-Martínez, G. Pérez-Lechugaa (2017) showed a significant impact of market capitalization measured by the stock market index and banking net lending rates on the growth and development of Latin American countries. Namely, the research also showed that the increase in the capitalization of listed companies, the increase in domestic loans provided by the banking sector, and the decrease in differences in interest rates have a positive relationship with income per capita, and therefore with economic development in Latin America. Dynamic panel data estimates showed the importance of financial variables for economic growth and development.

There is a general assumption that the financial sector promotes economic growth by increasing the rate of capital accumulation and improving efficiency. Thus, King and Levine (1993) analyzed a sample of 80 countries and found in most cases that the financial sector improves economic efficiency and is correlated with GDP per capita growth. Further along these lines, De Gregorio (1996) studies credit constraints that increase aggregate saving, which in turn contributes to economic growth. De Gregorio also observes that credit restrictions have negative effects on the accumulation of human capital, and by themselves thus also on the growth of production. In her research, Cooray, A. (2010) showed that especially in Asia, the volume of market capitalization has a huge share in GDP.

Mhadhbi (2014) considered the empirical relationship between financial development and economic growth using data from developed and developing countries over the period 1973–2012. He uses a panel data model and finds that the accessibility of the banking system affects economic growth with a significant and positive impact. On the other hand, he believes that loans granted by the financial system to the private sector have a negative impact on growth. Rashti, Araghi, and Shayeste (2014) study the impact of financial development on economic growth with emphasis on the 2008 financial crisis in the United States. They believe that the financial crisis had different effects depending on the country. The results of the estimated models show that the financial crisis has had the greatest impact on developing countries with high average income than on developed countries and developing countries with low and middle income. They also find that capital markets have shown a positive effect on economic growth in low-middle-income

countries and a negative effect on high- and middle-income developed countries during the period 1990-2010.

Naik, P. K., & Padhi, P. (2015) provided a broader analysis of the impact of stock exchange variables on GDP growth. Namely, they considered emerging markets in Europe, Asia, South America and Africa. In their research, they used three indicators of stock market development, namely the market capitalization ratio, the total value of traded shares and the turnover ratio. In the end, they conclude that a well-developed stock market promotes economic growth, because it reduces the costs of mobilizing savings, facilitates investment in the most productive technology, and provides permanent access to capital collected through share issues.

In the empirical literature on this topic, strong empirical evidence can be found that the development of the financial sector encourages innovation by accelerating technological progress, which leads to economic growth. In this sense, the development of the financial sector plays an important role in alleviating the restrictions on external financing of companies, and therefore in promoting economic growth. In this regard, Rajan and Zingales (1998). study a sample of 36 industries belonging to 48 countries and conclude that the development of the financial sector drives economic activity. They noted that the financial system helps mobilize savings and allocate capital that contributes to economic activity. Empirical evidence presented by Levine and Zervos (1998) also suggests that stock market development is positively correlated with economic growth in the long run.

In addition to the above, there is also empirical evidence that the financial sector can promote the accumulation of human capital. In this sense, De Gregorio and Kim (2000) present an endogenous growth model in which credit markets affect the distribution, over time, of people with different educational abilities. In this way, specialization in work can increase growth and well-being. These authors also discuss the importance of opening credit markets and its impact on income distribution, as well as the importance of intergenerational savings to cover the absence of credit markets. Bekeart, G. Harvey, C.R. (2003) explained and demonstrated the impact between capital market liberalization and GDP growth in emerging markets.

The stock market facilitates the collection of capital needed for the employment of large production factors, which Van Nieuwerburgh, Buelens & Cuyvers (2006) point out in their paper. Namely, through their paper they presented descriptive and quantitative evidence that financial development, and especially the availability of financing for companies based on the stock market, was an important determinant of economic growth in Belgium. Also, in their research, the authors Arestis, P., Demetriades, P.O. and Luintel, K.B. (2001) confirm through time series data that the stock market affects economic activities, especially industrial activities.

The authors Beck & Levine (2004) prove that banks together with the development of the stock market influence the development of the economy using panel data for the time period 1976-1998. De la Fuente and Marín (1996) analyze the interaction and relationships of financial intermediaries, the accumulation of physical capital, technological progress and economic growth. They expanded the range of independent variables. In this context, they claim that economic growth is based on the development of new types of intermediate products. They further point out that the probability of innovation success depends on the actions of both entrepreneurs and financial intermediaries. The latter conclude contracts with innovators that enable better risk distribution and a higher level of innovative activity, accelerating technological progress and economic growth. These authors conclude that financial intermediaries direct savings to more productive investment projects, identifying the best entrepreneurs and the best technologies, reducing the risks associated with innovation and contributing to economic efficiency, technological progress and economic growth.

Nurudeen, A. (2009) in his paper shows according to the data that the development of the stock market (market capitalization-GDP ratio) increases the economic growth of Nigeria. In their

study, Vazakidis and Adamopoulos (2009) examined the causal relationship between the development of the capital market and economic development in France in the period 1965-2007 and found, on the basis of a series of tests, especially using the VEC model, that economic growth has a positive effect on the development of the stock market, taking into account the negative impact of the interest rate on the development of the stock market and economic growth.

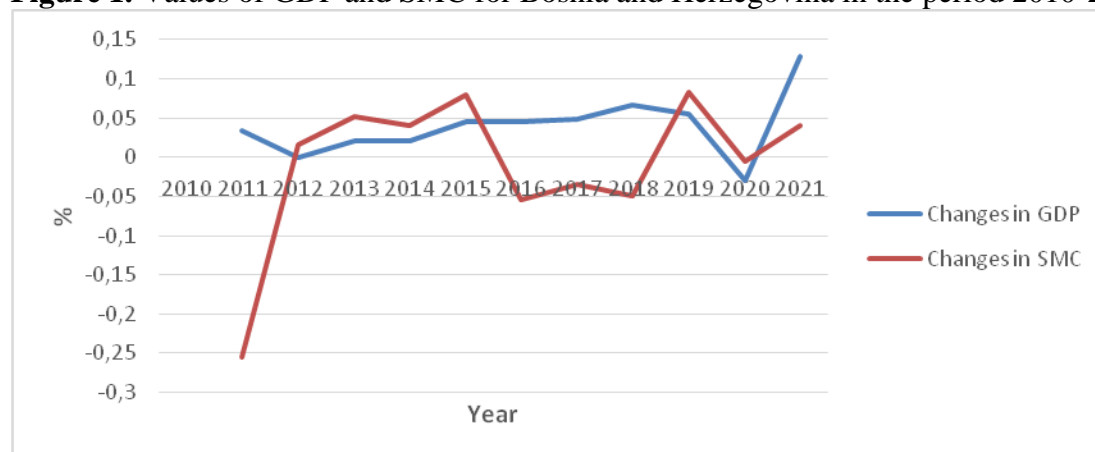
Contrary to the above, the authors Naceur, Ghazouani & Omran (2008) in their research analyzing 11 countries in the period 1979-2005. empirically prove that movements on the stock market have no effect on economic and investment growth, especially in the short term. Also, Wild & Lebdaoui (2014) in their research did not confirm a strong relationship between the stock market and economic growth of Morocco using quarterly observations. The Johansen-Juselius cointegration test provides evidence of a long-run relationship between economic growth and the Moroccan stock market index. However, in the long run, GDP reacts negatively to the increase in market capitalization, stock market index as well as stock market composite development. As stated in the paper, economic growth reacts with a certain delay to changes in the development of the stock market. Consequently, the ability of stock market development to stimulate economic growth could not be confirmed in the case of Morocco.

So, more or less, all studies that have been conducted on a given topic actualize the relationship between changes in financial markets and changes in the GDP of a given economy.

4. The relationship between market capitalization and GDP in Bosnia and Herzegovina

In order to get a clear picture of how much and in what way market capitalization and other financial indicators such as bank loans and the movement of the bank rate affect economic growth in Bosnia and Herzegovina, it was necessary to look at the movement of given quantities over a period of 10 years. Namely, for an objective review, the period from 2010 to 2021 was taken, which did not consider the period of the corona crisis, as this would have resulted in a deviation from the trends that were valid for the "normal" course of business. In fact, given sizes have an equal trend, that is, over time their difference has no major deviations, except for the period 2011-2012. year and period 2016-2018. Although it is a deviation of a maximum of 5.4%, their value has the opposite deviation from the movement of the GDP value, which has a positive trend. The given quantities are connected and have the same direction of movement in the period 2012-2015. year and from 2020 onwards.

Figure 1. Values of GDP and SMC for Bosnia and Herzegovina in the period 2010-2021.

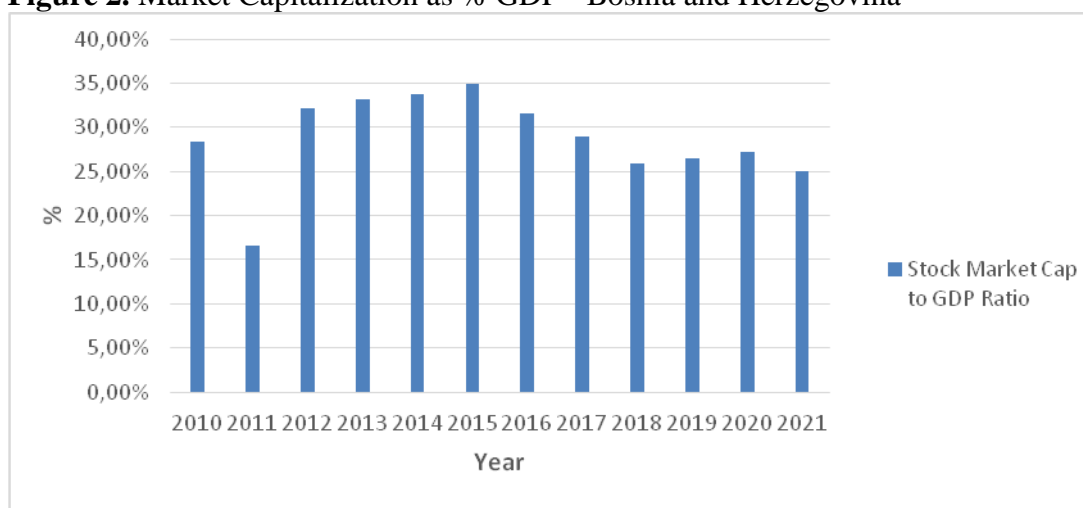


Source: Data of stock exchanges in Bosnia and Herzegovina and Central Bank Bosnia and Herzegovina

In this sense, this paper will highlight and explain the connection between trends in market capitalization on the Sarajevo and Banja Luka Stock Exchanges and trends in Bosnia and Herzegovina's GDP. In the following diagram, it can be established that the indicator of market capitalization in the gross domestic product has a downward trend since 2015. The weak depth of market transactions as well as the number of transactions on the stock exchanges in Bosnia and Herzegovina favors a reduced share.

The consequences of larger acquisitions on the capital market as well as the issuance of an additional amount of shares in a certain period increased the share itself. However, only active trading from individual participants is still at a meager level.

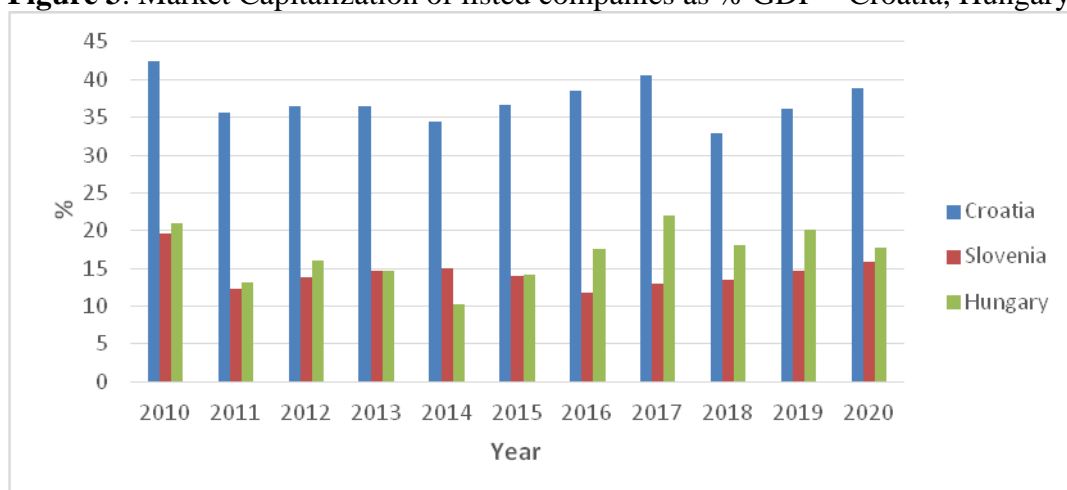
Figure 2. Market Capitalization as % GDP - Bosnia and Herzegovina



Source: Data of stock exchanges in Bosnia and Herzegovina

When it comes to the share of listed companies on the markets of Croatia, Slovenia and Hungary, it is interesting to point out that Croatia has a significantly larger share compared to the others. Compared to developed markets, this shows a very low level, which is related to the strong share of banks in the financing of the economy, the inefficiency of the capital market, legal uncertainties and lack of transparency.

Figure 3. Market Capitalization of listed companies as % GDP – Croatia, Hungary, Slovenia



Source: World Bank data

5. Data and methodology

The dependent variable in our research is the nominal GDP of Bosnia and Herzegovina, while the independent variable is the market capitalization achieved on two stock exchanges in Bosnia and Herzegovina (Sarajevo and Banja Luka stock exchanges). Table 1 shows the averages, deviations, and maximum and minimum levels of variables in the study. The rate of inflation, interest rates, and the tax burden on labor are different depending on which entity of Bosnia and Herzegovina we are talking about. Therefore, we could not use the mentioned variables as influencing factors since it is difficult to determine their share in the given total values.

Table 1. Descriptive statistics of dependent and independent variables

Variable	Notation	Average	Deviation	Minimum	Maximum
GDP B&H	gdp	30.288.166.666,67	4.293.948.464,64	25.365.000.000,00	38.637.000.000,00
Market Capitalization	mc	8.633.504.065,83	1.518.201.455,40	8.299.667.988,80	11.139.257.287,17

Source: Data from the Central Bank of Bosnia and Herzegovina and the Sarajevo and Banja Luka Stock Exchanges

As already indicated, much of the research examining the relationship between capital market expansion and economic growth predicts a certain correlation between them. The following statistical analysis, presented through tables. 2–8, explains this argument. Namely, the determination of the connection between the given quantities and the importance of this connection will be elaborated in the continuation of the paper.

5.1. Statistical explanation of variables

In the investigated model, we will use certain statistical tools to determine the cointegration of the two variables that we assume are related to each other over time. To test the stationarity of time series, use the Augmented Dickey Fuller test. The ADF test belongs to the category of tests called 'Unit Root Test', which is an appropriate method for testing the stationarity of a time series. The unit root is a characteristic of a time series that makes it non-stationary. Technically speaking, a unit root is said to exist in a time series of values of $\alpha = 1$ in the equation below. We can write the given equation as:

$$(1) Y_t = \alpha Y_{t-1} + \beta X_t + \varepsilon$$

Where Y_t is the time series value at time 't' and X_t is an exogenous variable (a separate explanatory variable, which is also a time series). The presence of a unit root means that the time series is not stationary. In addition, the number of unit roots contained in the series corresponds to the number of differential operations required to make the series stationary.

In our case, performing the unit root test, we obtained the following values:

Table 2. Unit Root Test

Variables	Level				1st Difference			
	C		C&T		C		C&T	
	t-Statistic	Prob.	t-Statistic	Prob.	t-Statistic	Prob.	t-Statistic	Prob.
SMC	-1,925667	0,3101	-2,445258	0,3422	-6,121126	0,0009	-7,861571	0,0006
GDP	1,553201	0,9976	-1,757468	0,6497	-3,767707	0,0218	-4,761898	0,0192

The null hypothesis assumes the presence of a unit root, that is non-stationarity. Carrying out this test, we observe that the market capitalization of shares and the gross social product on the first difference have a obtained p-value lower than the level of significance (i.e. < 0.05), which means that the null hypothesis is rejected. This concludes that the series is stationary. To assess the existence of a long-term relationship between the variables, we will use the cointegration test. Cointegration theory points out that even though the variables in the model are non-stationary in levels, the linear relationship between them can still be stationary in difference. The study otherwise applies the multivariate cointegration approach developed by Johansen and Juselius (1990) to test whether there is a long-term relationship between the variables under consideration. By conducting Johansen's cointegration test on two variables, we conclude that with a probability of less than 5% we can reject Ho. and confirm that there is cointegration, that is, that in the long term there is a connection between market capitalization and gross social product, which we can see from table 3.

Table 3. Johansen Coitegretion Test

Unrestricted Cointegration Rank Test (Trace)					Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized					Hypothesized				
No. of CE(s)	Eigenvalue	Trace Statistic	0,05 Critical Value	Prob.**	No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0,05 Critical Value	Prob.**
None *	0.906129	37.42863	18.39771	0.0000	None *	0.906129	23.65830	17.14769	0.0049
At most 1 *	0.747674	13.77033	3.841465	0.0002	At most 1 *	0.747674	13.77033	3.841465	0.0002

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

The well-known vector autoregression model (VAR) is used to examine the fluctuation of time series. In a model that actually represents the form of a process, the current value of a random variable depends on the value that the random variable had in the past. The autoregressive model is presented as a time series modeled as a linear combination of its own lags. That is, the past values of the series are used to predict the present and the future.

A typical regression model equation looks something like this:

$$(2) Y_t = \alpha + \beta_1 Y_{t-1} + \beta_2 Y_{t-2} + \dots + \beta_p Y_{t-p} + \varepsilon_t$$

Where α is the intercept, a constant, and β_1, β_2 to β_p are the lag coefficients (autoregression parameters) of Y to order p and ε_t of the white noise sequence. When $|\alpha| < 1$, the process in equation (1) is a stationary trend, i.e. the effect of the shock today disappears over time, and the process reverts back to the deterministic trend. Thus, a process innovation will not change one's long-term process forecast. In a VAR model, each variable is modeled as a linear combination of past values of itself and past values of other variables in the system. Since we have multiple time series that influence each other, it is modeled as a system of equations with one equation per variable (time series). That is, if we have two or more time series that influence each other, we will have a system of two or more equations.

Since we have two time-varying variables, this means that we will have the following system of equations for the VAR model:

$$(3) \begin{aligned} GDP_{1,t} &= \alpha_1 + \beta_{11} GDP_{1,t-1} + \beta_{12} SMC_{2,t-1} + \varepsilon_{1,t} \\ SMC_{2,t} &= \alpha_2 + \beta_{21} GDP_{1,t-1} + \beta_{22} SMC_{2,t-1} + \varepsilon_{2,t} \end{aligned}$$

Where $GDP \{1, t-1\}$ and $SMC \{2, t-1\}$ are the first lags of the time series GDP1 and SMC2 respectively. The above equation is called a VAR (1) model, because each equation is of order 1, that is, it contains up to one lag of each of the predictors (GDP1 and SMC2). Since the GDP and SMC labels in the equations are interrelated, they are considered endogenous variables rather than exogenous predictors. So, the basis of vector autoregression is that each time series in the system affects each other.

The data used in this research were obtained from the Central Bank and the Stock Exchange in Bosnia and Herzegovina. Namely, the market capitalization represents the sum of the same from two stock exchanges in Bosnia and Herzegovina. Workloads as well as interest rates are different in the entities, and other parameters that depend on the previous two can differ significantly.

Table 4 presents the results of the VAR in which it can be examined that there are some coefficient values that suggest that there may be a relationship between the variables. The value of the coefficients of GDP with a delay does not significantly affect GDP and economic growth, and the value of the intercept in the equation is not significant either. The market capitalization represented by SMC also has no effect on economic growth.

$$GDP = -0,886817 \times GDP(-1) + (-0,201490) \times SMC(-1) + 2,07000$$

$$SMC = -0,406099 \times GDP(-1) + (-0,477101) \times SMA(-1) + 9,90000$$

Table 4. Vector Autoregression Estimates

	D(GDP)	D(SMC)
D(GDP(-1))	-0.886817 (0.50717) [-1.74856]	-0.406099 (0.44783) [-0.90682]
D(SMC(-1))	-0.201490 (0.27525) [-0.73201]	-0.477101 (0.24305) [-1.96299]
C	2.07E+09 (6.4E+08) [3.25693]	9.92E+08 (5.6E+08) [1.76731]
R-squared	0.309394	0.364539
Adj. R-squared	0.112078	0.182978
F-statistic	1.568012	2.007809

By considering the different delay length selection criteria listed in the following table, they show that the optimal delay order for this model is suggested by most selection methods.

Table 5. The Selection of Lag Length

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-394.4921	NA*	6.33e+35	88.10936	88.15318	88.01478
			5.12e+35	87.84681	87.97829	
1	-389.3106	6.908598	*	*	*	87.56307
						87.41747
2	-385.5067	3.381321	6.74e+35	87.89037	88.10951	*

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

VAR cannot determine the direction of causality, so the study used Granger causality to identify the causal relationship between variables. The Granger causality test can be described as in table 6. taking the variables under consideration.

Table 6. Pairwise Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
D(SMC) does not Granger Cause D(GDP)	9	3.40826	0.1368
D(GDP) does not Granger Cause D(SMC)		0.26267	0.7813

According to the above test, we see that the dependent variable GDP reacts weakly to changes in market capitalization since the probability value is above 0.05%, which means that the null hypothesis cannot be rejected. When it comes to the impact of economic growth on market capitalization, we also do not have confirmation of a connection at the 0.05% level.

To explain the dynamics of the system, we will use the method of variance decomposition, which belongs to important analytical techniques. This specific method decomposes the variation of a variable into component shocks relative to the other variables under consideration. Thus, it provides information about the specific random innovations of the variables in the model.

Tables 7, 8. Variance decomposition of GDP, SMC

Variance Decomposition of GDP:			
Period	S.E.	GDP	SMC
1	1.35E+09	100.0000	0.000000
2	1.40E+09	97.57189	2.428113
3	1.97E+09	96.75655	3.243448
4	2.06E+09	94.77578	5.224215
5	2.53E+09	95.20206	4.797939
6	2.68E+09	94.14174	5.858259
7	3.13E+09	94.43149	5.568506
8	3.34E+09	93.63654	6.363463
9	3.81E+09	93.81456	6.185441

10	4.09E+09	93.25565	6.744354
Variance Decomposition of SMC:			
Period	S.E.	GDP	SMC
1	4.27E+08	2.836255	97.16374
2	4.78E+08	8.826891	91.17311
3	4.87E+08	11.41883	88.58117
4	4.93E+08	12.41855	87.58145
5	5.00E+08	14.74297	85.25703
6	5.02E+08	15.48405	84.51595
7	5.06E+08	16.88344	83.11656
8	5.08E+08	17.25780	82.74220
9	5.11E+08	18.36399	81.63601
10	5.11E+08	18.50710	81.49290

According to the data from the variance decomposition tables above, about 6.7 percent of GDP can be explained by the effects of stock market capitalization. On the other hand, about 18 percent of the stock market capitalization can be explained by variations in GDP. These results indicate a very weak connection between these two variables in the long term.

Conclusion

The study examines the relationship between market capitalization on the stock exchanges and GDP trends in Bosnia and Herzegovina. The data used were taken from the stock exchanges in Bosnia and Herzegovina, the Central Bank of Bosnia and Herzegovina and the World Bank. The Johansen cointegration results show that the study can establish a long-term relationship between the variables.

A vector autoregressive model is applied to examine further relationships. The result reveals the existence of a weak relationship between economic growth and stock market capitalization. Market capitalization does not cause economic growth where the direction from SMC to GDP is at a level above 0.05% significance. The study also used variance decompositions to determine the impact of shocks on the variables in the model. The results reveal that around 6.7 percent of GDP can be explained by stock market capitalization effects. On the other hand, 18.5 percent of stock market capitalization can be explained by variations in GDP. The possible lack of liquidity, market efficiency as well as the clear ownership structure of the stock market limit or prevent the expected benefits of the development of the capital market to increase the growth of the real economy. In order to provide a theoretical framework as well as a practical sense that the development of the stock market plays its relevant role in economic growth, financial market policy makers should implement concrete policies that will lead to the intensification of trading on the capital market in order to improve the liquidity, efficiency and productivity of the market through deepening and expanding the market itself.

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EFFICIENCY OF TOURISM AND HOTEL INDUSTRY IN BOSNIA AND HERZEGOVINA

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ABSTRACT

In this paper, we analyzed the efficiency of tourism and the hotel industry in Bosnia and Herzegovina (BiH) for the period 2015-2021. The insufficiently researched and analyzed question of the efficiency of tourism and the hotel industry in BiH makes it impossible to understand the real situation and problems in this sector. Considering the complex administrative division of BiH, along with the visible differences in the number of tourist arrivals and overnight stays in different parts of the country, and the perception that hotel accommodations are of poor quality, as well as the importance of the hotel industry for the development of the BiH economy, there is a need to determine the macro efficiency of tourism and the hotel industry at the level of BiH to identify the most important determinants of inefficiency. The research was conducted using a two-phase analysis: output-oriented Data Envelopment Analysis (DEA) assuming variable returns to scale in the first phase, and the truncated regression in the second phase. In the DEA analysis, the number of available beds, the number of employees in the tourism and hotel industry, and the average net salary of employees were used as inputs. The number of tourist arrivals and the occupancy rate of tourist capacities were used as outputs. The analysis determined a relatively high degree of efficiency with a positive trend in the period 2015-2019, as well as a strong drop in efficiency caused by the spread of the COVID-19 pandemic in the year 2020. The highest average efficiency of the tourism and hotel industry in the analyzed seven-year period was determined in the Bosnian-Podrinje Canton Goražde and the lowest in the Tuzla Canton. By using truncated regression, variables that have a statistically significant impact on the effectiveness of tourism and the hotel industry in BiH were identified.

Keywords: hotel industry, tourism in Bosnia and Herzegovina, efficiency, DEA, truncated regression

JEL: Z32, C24, C51, C65

THE IMPACT OF COVID-19 PANDEMIC ON AGRICULTURAL TRADE

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Abstract

In this study, we analyse the effects of Covid-19 pandemics on agricultural trade. We conduct a descriptive analysis in order to identify the key trends and changes in agricultural trade, production, demand, and food security caused by the pandemic and the related policy measures. Additionally, we compare the effects across regions and subsectors, finding considerable heterogeneity in the trade effects of the pandemic. Finally, an overview of the trade-policy response to the pandemic concerning agriculture is provided. The results of our analysis show that agriculture was highly resilient during the Covid-19 pandemic. Thereby, we identified some of the major reasons for this resilience. We also described some adapting strategies of agricultural firms with the potential to further increase the resilience of agriculture. However, the increased food insecurity and the persistent reactive trade policies raise questions regarding the future of agricultural trade liberalisation.

Keywords: international trade, exports, agriculture, trade policy, covid-19, pandemic

JEL classification: F13, Q17, Q54

1. Introduction

The onset of the Covid-19 pandemic had an immediate effect on the world economy. Policymakers responded with measures aimed at curtailing the spread of the virus. The more restrictive measures, such as movement limitations and lockdowns led to considerable disruptions of numerous economic activities, resulting in increased unemployment, loss of production and income, and disequilibria in many markets. The movement restrictions also caused increased frictions in logistics, putting additional pressure on supply chains (Kerr, 2020). It is estimated that the global output fell by 3.3% in 2020 (International Monetary Fund, 2021). The initial forecasts predicted severe drops in international trade (World Trade Organisation, 2020). These fears did not actualise in the case of agriculture. On the contrary, after the initial shock agricultural trade increased during the pandemic.

In this paper, we explore the effects of the Covid-19 pandemic on agriculture. Thereby we focus on agricultural trade and trade-related policies, while also considering the issues of food security, agricultural production, and demand. The main aim of the research was to identify the changes in the sector occurring due to the pandemic, the reasons behind robust performances of agricultural

trade, and the dynamics of the introduction of related policy measures in order to consider the future of agricultural trade.

We conduct a descriptive statistical analysis, using the most recent data available from various sources (including the Food and Agriculture Organisation, International Labour Organisation, World Trade Organisation, and Global Trade Alert). In addition, we carry out a comparative analysis, accentuating the regional and sectorial heterogeneity of the negative effects of pandemics. Finally, we provide an overview of the key empirical studies which investigated the effects of the Covid-19 pandemic on agriculture. We identified high levels of resilience in agricultural trade and the value chains. These strong performances of agricultural trade could be attributed to various factors, including the low income elasticity of food demand (Arita, Grant, Sydow, & Beckman, 2022), specific transport modes used for the majority of agricultural products, adaptability of agricultural firms, and appropriate policy response. However, our analysis also reveals certain issues which could require a change in the multilateral trade system to avert future crises and further increase the resilience of the sector.

The remainder of this paper is organised as follows. In Section 2, we analyse the effects of the Covid-19 pandemic on the supply of agricultural products. Section 3 deals with the effects of the pandemic on food demand. The implications for food security are elaborated in Section 4. In Section 5, we present the results of the descriptive analysis dealing with the effects of the pandemic on agricultural trade. We provide an overview of the key issues agricultural firms faced during the pandemic and their response strategies in Section 6. In Section 7, we investigate the trade-policy response to pandemics and consider the persistence and dangers of the newly introduced measures. The final section concludes.

2. The Effects of the Pandemic on Food Supply

The Covid-19 pandemic affected nearly all facets of the agriculture sector. There were disruptions on both supply and demand sides, which, ultimately, contributed to the increased food insecurity, particularly in certain regions. In this section, we provide an overview of the key supply-side factors influencing agricultural production and trade which were affected by the pandemic.

On the supply side, the pandemic led to the disruption of economic activities both within the agricultural sector and in the other sectors associated with agriculture. In an attempt to curb the spread of the virus, governments across the world introduced measures containing limitations on the movement of people and goods. The limitations referred to the internal and international movements, alike. The disruptions in food supply due to the pandemic could be categorised into two main groups: the input market disruptions and the output market disruptions.

Agricultural production in many countries relies heavily on imported inputs. Pandemic-related measures led to supply chain problems in numerous industries, including agriculture. Securing stable supplies of the needed input became increasingly difficult. For instance, in the European Union, supply chain disruptions led to short-term shortages of agricultural machinery and pesticides (Garnett, Doherty, & Heron, 2020).

Labour shortages are another important supply-side disruption the agricultural sector faced during the pandemic. The labour shortages could be due to either direct or indirect effects of Covid-19. The direct effects entail Covid-19 infections making the workers in the sector absent and unable to work. It is estimated that 54,036 agricultural workers were affected and unable to conduct their

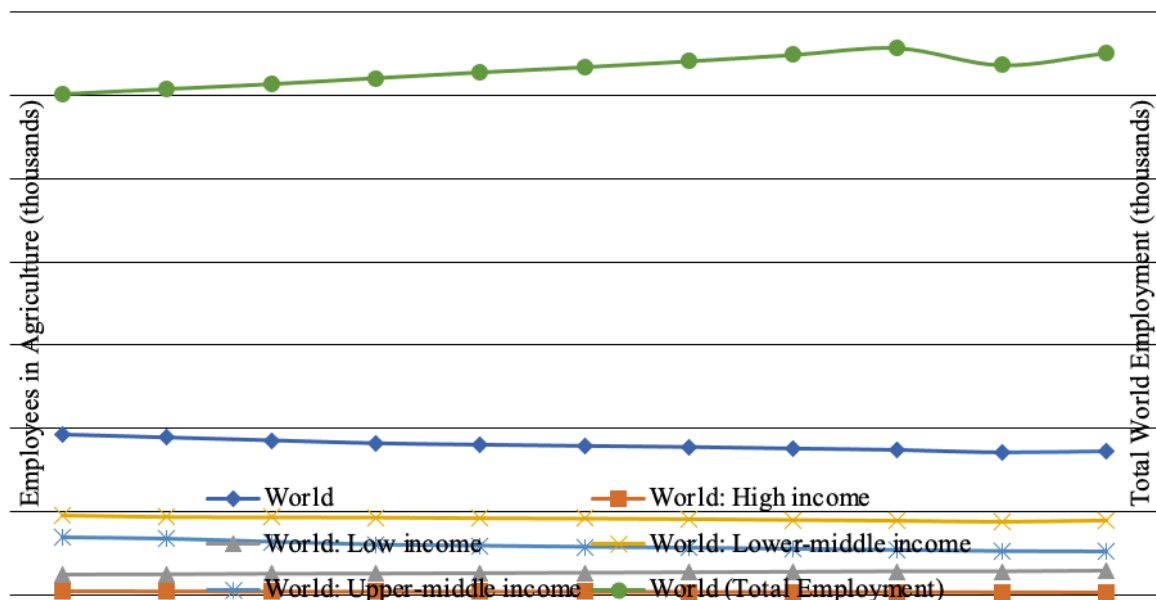
work-related activities since the onset of the pandemic (Aday & Aday, 2020). Similar non-negligible instances of labour shortages directly caused by Covid-19 infections are reported in the meat-processing industries of Germany and abattoirs in France (Abid & Jie, 2021).

There is also an international dimension to the temporary employment shortages in agriculture. Agricultural producers, particularly in the bordering regions of countries, employ foreign seasonal workers, especially during the sowing and harvesting seasons. Tighter border controls aimed at limiting the international movement of people for the purpose of curbing the pandemic suddenly took away the option for agricultural producers to rely on foreign seasonal workers. These measures temporarily restricted labour migrations, limiting the production capacity of the agricultural sector.

In Figure 1, we present the dynamics of employment in agriculture. There is an apparent global decreasing trend of labour input in the sector. The average annual growth rate of total world employment in agriculture in the period between 2011 and 2021 is -1.27%. This long-term trend is, for the most part, caused by the general transformation of the food system and the increased reliance on more capital-intensive production methods.

After the onset of Covid-19 pandemic the employment in agriculture fell by approximately 1.66% in the world. This decrease in employment, despite being above average, is not higher than the decreases in the period 2011-2014, where employment in agriculture was reduced by between 1.77% and 1.85% annually. However, the decrease was heterogeneous in terms of economic activities and regions, which caused increased operational uncertainties.

Figure 1. Employment in Agriculture (2011-2021)



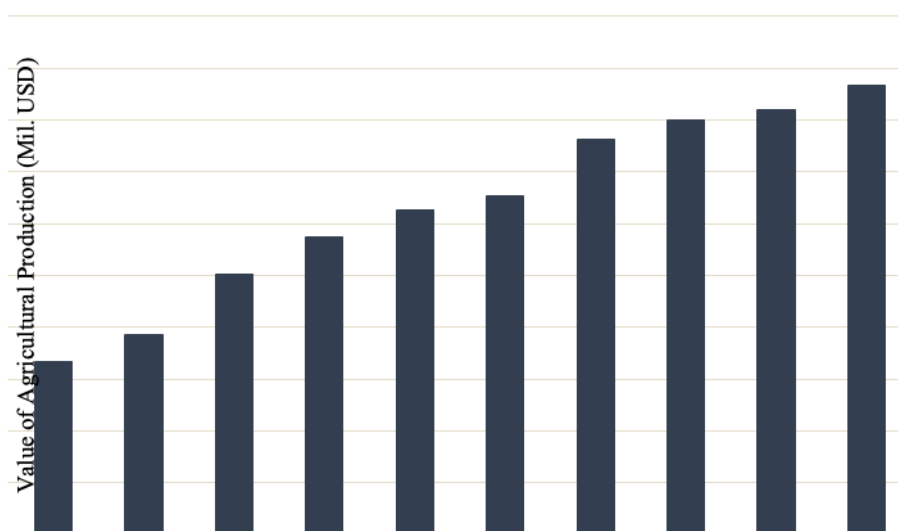
Source: Authors' calculations based on the International Labour Organisation data (accessed on 27 September 2022)

In 2021 there was a noticeable recovery of employment in the sector, as the number of employees increased by 1.15%. Compared to the other sectors, we can conclude that employment in agriculture was relatively less affected by the pandemic. For example, in 2020, total world employment fell by 3.16% after a decade of consistent annual growth of between 0.99% and

1.28%. In contrast, there is the opposite trend in agriculture and a much less severe decrease in employment in 2020. Similarly to the employment in agriculture, total world employment relatively quickly recovered as evidenced by the growth rate of 2.32% in 2021.

There is some heterogeneity in employment dynamics in agriculture in terms of both the long-term trend and the change during the pandemic depending on the income-level group. For instance, unlike in all the other groups of countries, in low-income countries, there is a positive trend in employment in agriculture which could reflect the agricultural development strategy of these countries. With relatively low labour costs, these countries predominantly expand agricultural production through extending land use, whilst maintaining labour-intensive production techniques. Incidentally, in this group of countries, the decrease in agricultural employment was the least pronounced during the pandemic. With the increase in income level, the negative effects of the pandemic on agricultural employment are increasingly severe.

Figure 2. Gross Agricultural Production (2011-2020)



Source: Authors' calculations based on the Food and Agriculture Organisation data (accessed on 28 September 2022)

Note: The values are expressed in millions of constant USD for 2014-2016.

Another important supply-side factor exacerbated by the pandemic is logistics and, particularly, transport. Certain border measures led to logistics problems and delayed shipments, which is highly problematic for perishable agricultural products. In addition, labour shortages, previously discussed in the context of agriculture, were not averted in other sectors, including logistics. The lack of workers in the sector led to the lack of transport options available to agricultural producers. This resulted in some agricultural producers dumping the products, unable to reach the markets, resulting in the loss of agricultural production. Access to markets was limited in the case of both domestic and foreign markets. The livestock sector was markedly affected by these developments. This, coupled with the disruption of input supply in the sector, meant that the farmers in countries such as China were effectively unable to sell their livestock during the onset of the pandemic (Zhuo, Ji, & Ding, 2020).

However, viewed aggregately, there is little evidence of the significant effects of the Covid-19 pandemic on agricultural production. This is evidenced by Figure 2. Here we can notice a

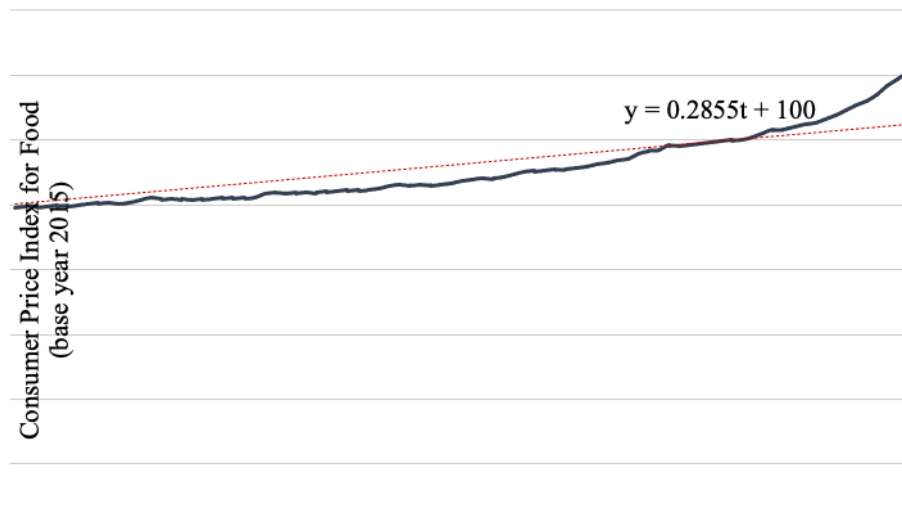
dynamic increase in the value of gross agricultural production over the past decade. There was a positive growth rate in every observed year, averaging 1.62%. In spite of the pandemic and the related disruptions, the production continued growing throughout 2020, increasing by 1.18% compared to 2019 and continuing the long-term upwards trend. At the end of 2020, the production value was 15.48% higher than at the beginning of the observed period.

Finally, the supply of agricultural products was also affected by trade policy measures that were part of the pandemic-related response. The main goal of these temporary measures was to stabilise the supply of agricultural products and achieve food security. The measures primarily consisted of various export restrictions. The main idea of these restrictions was to limit the ability of farmers to sell their products overseas in order to increase domestic supplies, thereby controlling the prices and maintaining the affordability of food. These measures are considered in greater detail in Section 7 of this paper.

3. The Effects of the Pandemic on Food Demand and Prices

The Covid-19 pandemic increased the concerns over the availability and affordability of food. One of the ways to consider the effects of the pandemic on food demand and food supply simultaneously is to examine food prices. We do this in Figure 3, where we present the monthly dynamics of the food consumer prices index.

Figure 3. Monthly Dynamics of Consumer Prices of Food (Base Index, 2015=100)



Source: Authors' calculations based on the Food and Agriculture Organisation data (accessed on 28 September 2022)

We can determine a clear upwards trend in food prices in the period between 2015 and 2022. A simple regression analysis we conducted in order to identify the trend shows that the price index for food increases by 0.28 per month on average, in comparison to the base year of 2015. Around the beginning of 2020 price movement diverged from the long-term trend, indicating the accelerated food prices growth which could be attributed to the changes caused by the Covid-19 pandemics. Namely, in the first quarter of 2020, food prices grew by over 1% monthly on average. The price growth was somewhat subdued over the remainder of the year. However, continuous instability in the economic and political environment and general inflation led to a new period of intensive food price increases. The increases were particularly pronounced in the

period after October 2021, continuing throughout 2022, and averaging over 2.03 percent points per month.

Consumers' income is another important factor determining demand. As discussed previously, the pandemic itself, as well as the following measures, disrupted economic activity leading to the rise in unemployment. Agricultural producers were particularly vulnerable to this, losing both their produce and their primary income. More generally, the loss of jobs and income reduced the purchasing power worldwide. This, paired with growing food prices, indicates that food affordability is diminishing, imperilling global food security.

It is worth mentioning that for many individual agricultural products, demand remained unscathed despite the negative effects of the aforementioned demand-side factors. This can be explained by the relatively low price elasticity of food. Namely, food is a necessary product. In spite of the income levels decreasing, job losses, and price increases, the demand for it remains stable, as the consumers substitute the consumption of more luxurious products with food (Kerr, 2020).

This consistent inelastic demand paired with the previously described disruptions, particularly the logistics-related ones, led to some food shortages in many urban centres. In addition to the reduced production of some products and the logistics problems, panic purchases at the beginning of the pandemic contributed to the problem. Pessimistic expectations of the consumers regarding the supply of food and movement restrictions during the pandemic encouraged them to stock up the essential food products. The disequilibrium was short-term in nature, and the agricultural supply chains managed to adequately react and come up with increased quantities of food, averting a more severe shortage and food crisis (Abid & Jie, 2021).

A significant part of the demand for agricultural products comes from linked economic activities. The evidence from computed general equilibrium simulations based on the data from the World Agricultural Supply and Demand Estimates for 2020 shows that negative effects on agriculture are the strongest in economies with the largest hospitality sectors (Beckman & Countryman, 2021). Indeed, the hospitality sector was among the most affected by Covid-19 response measures, reducing the demand for agricultural products in the short term. The negative effects were especially strong in the United States, where it was estimated that disruptions in the hospitality sector resulted in a drop in agricultural products' prices by approximately 20% in the short term. Additional negative effects could be attributed to the limitations imposed on the retail sectors that further drove down the demand for agricultural products. However, the producers and consumers reoriented themselves toward the alternative channels, and in the case of most products, successfully overcame the disruptions. Still, frequent short-term demand-side changes make it difficult to predict the demand. This leads to increased uncertainty and risks the agricultural producers face when making business decisions.

4. Implications of the Supply and Demand Changes for Food Security

The previously discussed disruptions on both the supply and the demand side have important ramifications for food security and all of its four pillars. Problems with food supply directly affect the availability of food, while the combined interaction between a more limited supply, disrupted logistics, and falling incomes increase the unaffordability of food limiting access to food, particularly in the lower-income regions of the world. Logistical problems could also negatively affect the utilisation of food, as difficulties and delays in distribution compromise the sanitary and phytosanitary conditions of agricultural products. Finally, high levels of uncertainty affecting the

supply and the demand for agricultural products negatively reflect on the stability pillar of food security, as people face difficulty to access food consistently over time.

We consider some preliminary data on food security in Table 1. We aggregate the total number of people facing moderate or severe food insecurity, focusing on the period preceding the Covid-19 pandemics, as well as the period of pandemics.

Table 1. Moderately and Severely Food Insecure People (2018-2021)

Region	2018	2019	2020	2021
World	3359.3	3482.2	4038.6	4060.4
Africa	1065.4	1112.4	1213.8	1294.7
Asia	1748.4	1810.3	2159.5	2081.4
Latin America and the Caribbean	353.6	364.6	452.4	467.8
Northern America and Europe	183	185.5	204.4	207.4
Oceania	9.0	9.3	8.6	9.0

Source: Authors' calculations based on the Food and Agriculture Organisation data (accessed on 28 August 2022)

Note: The values are expressed in millions of people.

The results show a remarkable increase in the number of food insecure people since the beginning of the pandemic. In 2020 over 556 million more people in the world became moderately or severely food insecure. After this initial increase in food security by 16%, the situation stabilised in 2021, and food insecurity grew by around 1% compared to the previous year. The latest developments in 2022 are likely to deepen the food crisis which could further increase food insecurity, or, at the very least, prevent the quick recovery following the situation caused by the pandemic.

The changes in food security during the pandemic were heterogeneous across regions. Latin America and the Caribbean and Asia were particularly severely affected, with food insecurity growth in 2020 surpassing the world average, totalling 24.1% and 19.3%, respectively. Asia had a more robust recovery, with food insecurity decreasing the following year at a rate of 3.6%. In contrast, the problem was deepened in the Latin America region, where additional 15.4 million people became food insecure in 2021.

In Africa, the problem of food insecurity also worsened during 2020, but the growth rate of food insecure people was relatively less compared to Asia and Latin America. However, in Africa, the problem was already the most pronounced compared to the other regions. Additionally, the recovery trajectory is more unfavourable, with the number of food insecure people further increasing by 6.7% in 2021. This is the highest rate for 2021 of all the considered regions.

Traditionally regions of Europe and North America, characterised by a high level of food security, also faced an increase in food insecurity, albeit at a lower rate than the global average. In this region, 18.9 million people became moderately or severely food insecure during the pandemic. This negative development decelerated in 2021, although the number of food insecure people continued to grow, surpassing a total of 207 million people by the end of 2021. The region of

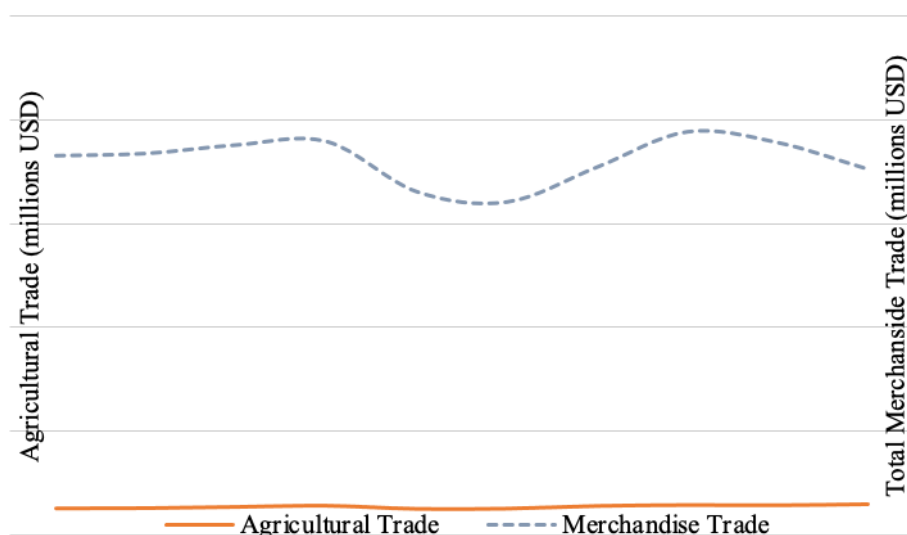
Oceania strongly contrasts these trends. In 2020, food insecurity decreased in the region by 7.5%. However, in 2021, the situation turned with 4.7% more people becoming food insecure. The growth rate was amongst the highest of all the considered regions, comparable only to the one in Africa.

5. The Covid-19 Pandemic and Agricultural Trade

Agricultural trade fell during the initial wave of the Covid-19 pandemic and the consequential lockdowns, in the first quarter of 2020. There are multiple confounding factors contributing to this decrease. Some empirical studies attempting to isolate the effects of Covid-19 from the other factors report that the pandemic directly contributed to a 5-10% decrease on aggregate (Arita et al., 2022). The negative effects were, however, up to three times lesser compared to the non-agricultural trade, according to the results of the same study.

In Figure 4 we present the dynamics of agricultural trade in the period between 2011 and 2020. Thereby, we make a comparison of agricultural trade to the global aggregate merchandise trade.

Figure 4. Agricultural and Total Merchandise Trade (2011-2020)



Source: Authors' calculations based on the Food and Agriculture Organisation data (accessed on 29 September 2022)

It is evident from the figure that agricultural trade was more volatile than the total merchandise trade in the observed period. However, the two series differ in the long-term trend. While the total merchandise trade was somewhat stagnant, agricultural trade was characterised by a strong upward trend, particularly following 2015.

There is also a distinction between how aggregate merchandise and agricultural trade reacted during the pandemic. The data for 2020 suggests that global merchandise trade fell by nearly 7% since the outbreak of the Covid-19 pandemic. Contrastingly, at the same time, agricultural trade grew by 3.31% annually.

In spite of the initial drop in agricultural trade in the first quarter of 2020, the trade recovered fairly quickly and steadily after the initial shock, returning to the long-term trend. This implies

that agricultural trade was relatively resilient during the pandemic. There are several possible reasons for such strong performances in agricultural trade.

One of the fundamental reasons is the high level of necessity of food. Despite all the negative effects the pandemic had on the global economy and consumers' income levels, the fundamental need for food remained. For this reason, consumption was, for the most part, restructured and the share of food remained intact. Even in the instances where the demand for agricultural products was reduced, as was the case with the hospitality industry, the demand, on aggregate, did not change but was, rather, covered through alternative channels.

In addition, agricultural products are mostly bulky, having a low value-to-weight ratio. For this reason, they require different modes of transport compared to the majority of consumer goods. Bulk shipments were less susceptible to logistical disruptions during the pandemic. Therefore, agricultural trade was impeded less by logistics than the other categories of trade.

Moreover, agriculture has simpler value chains. Compared to the more complex economic sectors, agricultural value chains stretch across fewer countries and include fewer agents to coordinate. They are also less fragmented than other value chains. The agricultural products themselves are less complex compared to the industrial products, requiring less foreign inputs and fewer input sources. All this contributes to the smaller change of value chain disintegration under stress. This proved to be beneficial during the Covid-19 pandemic, as agricultural value chains maintained their functionality throughout the crisis.

Finally, the pandemic coincided with the large increase in agricultural import demand in China. In addition to strict measures aimed at limiting the spread of the disease, China's agriculture faced additional problems, including the outbreak of African swine fever. Domestic agricultural production, particularly in the livestock segment, became insufficient to cover domestic needs. Overseas producers stepped in to cover this unsatisfied demand, which further contributed to the performance of agricultural trade.

In addition to trade, agricultural production also stabilised after the initial shock (Kerr, 2021). The producers quickly adapted to the uncertainties in the economic environment. The demand stabilisation followed.

There is considerable sectoral heterogeneity of the Covid-19 pandemic effects on agricultural trade. Some sectors within agriculture proved to be less resilient and more sensitive to the increased uncertainties, logistical problems, and labour shortages than others. Using a reduced-form gravity model to isolate the effects of the pandemic on sector-level trade, Arita *et al.* (2022) estimated the direct contribution of Covid-19, as well as the contribution of the related policy measures on sectorial-level trade. Some key results of this analysis are presented in Table 2.

Table 2. Sectorial Effects of Covid-19 Pandemic on Agricultural Trade

Product Group	Direct Covid-19 effects	Policy Response effects	Total Average Effects
Animal fats	0%	0%	0%
Beef	-3%	-3%	-4%
Biodiesel blends	0%	0%	-2%
Chocolate cocoa products	0%	-3%	-2%
Cocoa beans	0%	-11%	-4%
Coffee (unroasted)	2%	0%	-3%
Coffee roasted extracts	1%	3%	1%

Condiment sauces	1%	-2%	0%
Corn	0%	0%	-7%
Cotton	0%	-11%	-7%
Dairy products	0%	3%	1%
Distilled spirits	-5%	5%	-6%
Distillers grains	0%	0%	0%
Eggs	-1%	-4%	-1%
Essential oils	-6%	-4%	-5%
Ethanol	-7%	-7%	-10%
Feed and fodders	-5%	-4%	-1%
Fish	-2%	-7%	-5%
Food prep.	0%	-2%	-1%
Forest products	0%	-3%	-4%
Fresh fruit	0%	0%	0%
Fresh vegetables	0%	0%	0%
Fruit and vegetable juices	0%	0%	0%
Hay	-6%	0%	-2%
Hides and skins	0%	-22%	-15%
Live animals	2%	0%	1%
Meat	-3%	-8%	-5%
Non-alcoholic beverages	0%	0%	0%
Nursery flowers	-5%	-9%	-6%
Oilseed meal	3%	0%	1%
Other bulk commodities	0%	5%	2%
Other products	0%	-2%	-1%
Palm oil	0%	0%	0%
Peanuts	0%	-8%	-3%
Pet food	0%	-3%	-1%
Planting seeds	2%	5%	3%
Pork	2%	-2%	-2%
Poultry	-3%	-3%	-3%
Processed fruit	1%	0%	0%
Processed vegetables	0%	-3%	-1%
Pulses	0%	0%	0%
Rapeseed	0%	0%	0%
Rice	4%	0%	3%
Rubber	0%	-4%	-5%
Snack foods	-1%	-3%	-3%
Soybean meals	0%	0%	0%
Soybean oil	9%	0%	3%
Soybeans	0%	34%	11%
Spices	2%	-5%	-1%
Sugars	0%	-6%	-5%
Tea	0%	-6%	-5%
Tobacco	-3%	-7%	-3%
Tree nuts	0%	-8%	1%
Vegetable oils	0%	0%	0%
Wheat	-2%	0%	-2%

Source: Arita *et al.* (2022)

Note: Refers to the isolated effects determined by the econometric analysis. The numbers represent the change in trade due to a change of one standard deviation of the considered factors.

The results show how the increase in death rates within a country (by 50 per million people) decreases (or in some instances even increases) agricultural trade. The determined effect size could be considered an approximation of the effects that the infections of workers had on production and, consequentially, agricultural trade. The other determined effect is related to policy measures, and it shows how agricultural trade changes with the change in the Oxford

stringency index by 15 percentage points. These estimates encapsulate the indirect effects Covid-19 had on agricultural trade, through the related measures limiting the movement of people and goods.

The key pattern which is revealed by these results is that higher value-added and non-essential products sustained more severe negative trade effects. This could be explained by the higher income elasticity of those products. Consumers are sensitive in times of crisis and decreasing income, substituting more expensive products with cheaper alternatives, redirecting their consumption toward staples. In addition, supply-side disruptions reduced the availability of products for exports. In other instances, demand-side factors limited trade. For example, temporary shutdowns of retailers during the lockdowns, affected, to a certain extent, the agricultural producers exporting overseas. It is noteworthy, however, that the majority of sectors within agriculture were not affected by the pandemics.

In some cases, there are additional specific factors at play, discouraging international trade during the pandemic. In the case of meat, China as the major producer suffered additional negative effects of African swine fever, leading to a significant supply shortage which required redirection of meat sales from overseas to the domestic market. At the same time, there were temporary halts in other major meat-producing facilities, particularly in the Brazil and United States (Lusk, Tonsor, & Schulz, 2021). The spread of the Covid-19 virus among the workers caused halts which further reduced the meat supply and affected the exports of the sector.

Another example where Covid-19 negatively affected the trade is seafood products. These products generally have higher price elasticity. In addition, the sector relies heavily on air traffic as a means to distribute products across borders. The air traffic was much more disrupted than the other transportation modes for bulkier products, reflecting on the seafood global exports (Kerr, 2020). Similar effects can be observed in the case of trade in fungus and other more luxurious horticultural products (Lin & Zhang, 2020).

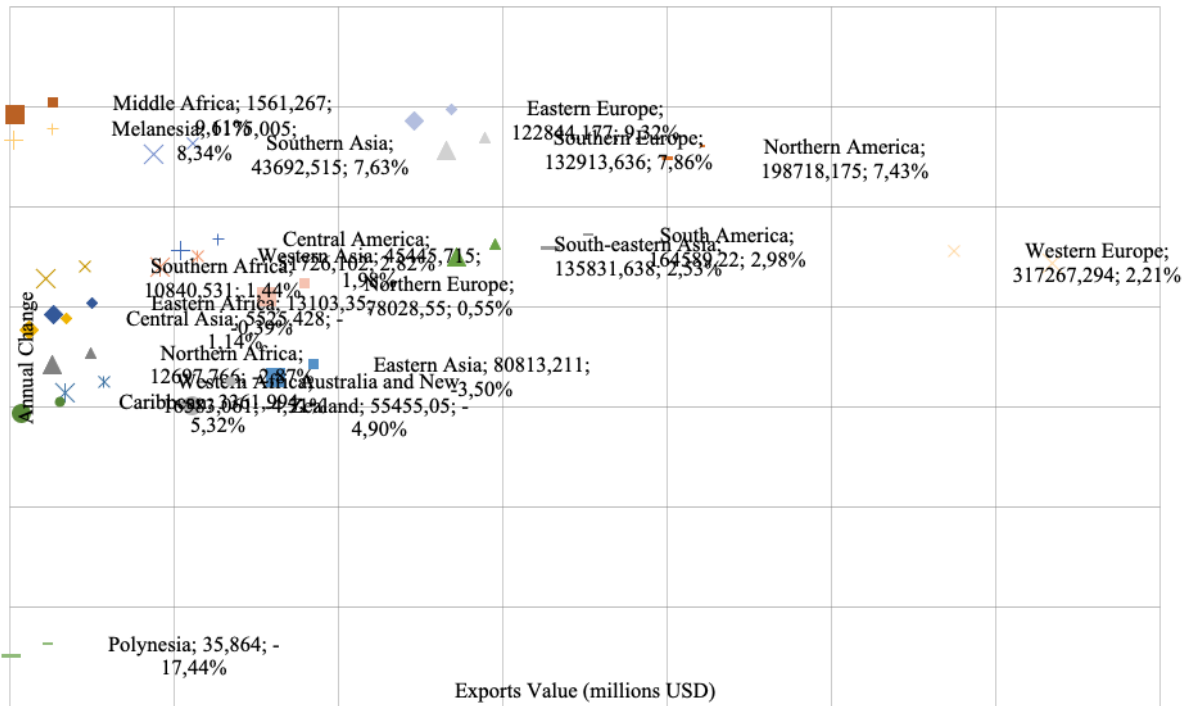
Another interesting pattern is related to the pronounced negative effects of Covid-19 on trade in agricultural products which serve as an input for the textile industry. These segments of agricultural trade were more severely hit by the pandemic, as clothing sales dropped due to a lower income and increased unemployment, reduced accessibility of clothing due to lockdowns, and the related limited functionality of the traditional brick-and-mortar clothing retail.

There are also some notable examples of sectors where the Covid-19 pandemic contributed to the increase in trade. These include soybean (and related products), livestock, rice, dairy products, bulk commodities, coffee, spices, and others. The common characteristic of the aforementioned sectors is that they produce staple food and (or) have lower value-added production. These products have a relatively inelastic demand. For this reason, most of the positive effects could be attributed to demand shifting from more expensive products to essential food. Partially, stockpiling of food also had a positive effect on trade, particularly in the short term.

The effects of the Covid-19 pandemic on agricultural trade also exhibit remarkable regional heterogeneity. This heterogeneity was explored in greater detail for agricultural exports in Figure 5, where we simultaneously consider the annual change in exports of the regions during 2020 and the absolute importance of the region for global agricultural trade. We can see the greatest decrease in agricultural exports in the regions with particularly severe Covid-19-related measures (such as Australia, New Zealand, and Eastern Asia), as well as the regions with relatively low

agricultural productivity and higher vulnerability of the sector. At the same time, the regions with traditionally highly productive and robust agricultural sectors reported significant increases in agricultural exports during the pandemic.

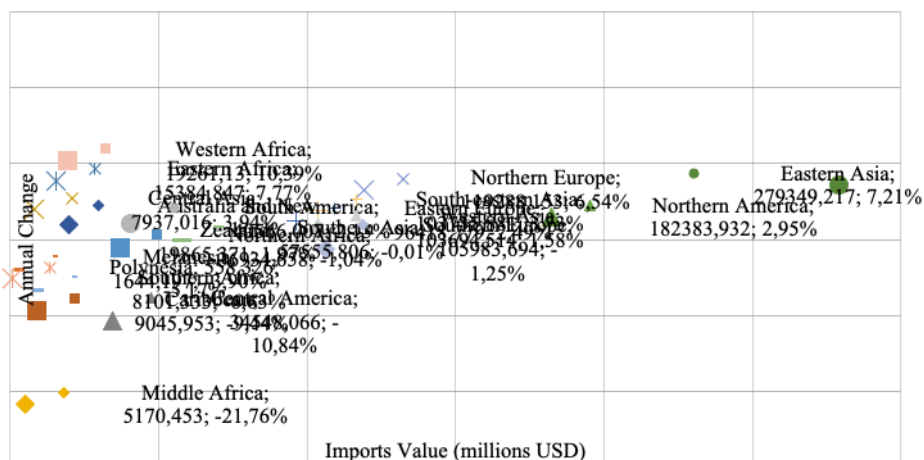
Figure 5. Annual Change in Agricultural Exports by Regions (2020)



Source: Authors' calculations based on the Food and Agriculture Organisation data (accessed on 30 September 2022)

A similar comparative analysis was conducted for agricultural imports. The results are presented in Figure 6.

Figure 6. Annual Change in Agricultural Imports by Regions (2020)



Source: Authors' calculations based on the Food and Agriculture Organisation data (accessed on 30 August 2022)

European and North American regions report significant increases in imports, albeit at a lower rate compared to their respective export growth. Eastern Asia, Western and Eastern Africa, and Australia and New Zealand had a considerable increase in imports. Paired with the decline in exports, this could suggest that these regions increased their reliance on foreign sources of agricultural products. For some of these regions, this could prove to be problematic, due to rapid increases in food prices and their stagnant income levels, which increases food insecurity due to decreased affordability and accessibility of food. Particularly worrisome is the situation in the regions of Polynesia and the Caribbean which faced the most drastic decreases in both imports and exports of agricultural products, potentially causing problems with food availability. In the related studies, the Covid-19 pandemic was found to significantly exacerbate the problem of food security (Baquedano, Zereyesus, Christensen, & Valdes, 2021).

Taken as a whole, this descriptive analysis shows that there were significant changes in both the imports and exports of agricultural products across regions, with some regions benefiting from the agricultural production disruptions in other regions. However, the analysis does not indicate significant differences in changes in agricultural trade performances for developing and developed countries. This corroborates the findings of Arita *et al.* (2022).

6. Firm-level Responses to the Crisis

Agricultural producers faced a variety of challenges during the Covid-19 pandemic. They followed various strategies in addressing these challenges. Firm-level surveys offer some insights into the micro-level problems agricultural firms faced with their participation in international trade during the pandemic. One of the most notable studies reporting the results of such surveys was conducted by Lin and Zhang (2020).

Among the most frequent hurdles to exporting cited by the agricultural firms are the rising costs and difficulties the firms face with financing their foreign trade operations. Many firms also considered the most commonly discussed general problems caused by the pandemic and the related measures as an important challenge in conducting exports. These include problems with logistics, labour shortages, and unstable and uncertain changes in demand. Small and medium enterprises are reported to suffer more severe effects on exports from these problems than large enterprises (Haqiqi & Bahalou Horeh, 2021).

Some of the reasons why agricultural trade was resilient during the pandemic, such as the demand elasticity of the products, were previously discussed. However, a non-negligible factor was also the adaptability of agricultural firms. These firms devised various strategies to help them adapt to the changes in the environment and address the problems caused by the pandemic.

One of the most common responses was the increased use of information and communication technology. The pandemic provided a strong impulse to agricultural firms to adopt these technologies and integrate them with their business processes in order to successfully adapt to the unstable environment during the pandemic (De', Pandey, & Pal, 2020). The technology allowed for a better connection between the buyers and sellers in agricultural markets. The use of smartphones and their related applications proved to be particularly important for the sector, especially in developing countries (Amjath-Babu, Krupnik, Thilsted, & McDonald, 2020). The needed infrastructure was already prepared, allowing for the quick and efficient deployment of technology applications aimed at facilitating agricultural trade. The technology enabled agricultural producers to establish direct contact with their customers with little complexity in its

application and usage. The use of technology was well-suited and complementary to the risk-mitigation measures intending to prevent Covid-19-related risks, as they enabled limiting physical contact during payment and contactless shopping and delivery.

In addition to agricultural producers adapting by using the existing technological solutions, such as e-commerce platforms and social networks, the pandemic also stimulated technology companies to develop new services aiming to satisfy the needs of traders of agricultural products. One such example is the foundation of a special Green Channel within the Alibaba e-wholesale system (Abid & Jie, 2021). This innovation facilitated the cooperation and coordination between all the participants in agricultural value chains.

The pandemic revealed the high potential of greater e-commerce use in agriculture. Before the pandemic, the effects of e-commerce use on agricultural trade were limited (Kastratović & Bjelić, 2022). The pandemic provided an opportunity to overturn this trend in agriculture and increase the use of e-commerce and information and communication technologies in general. The benefits this change offers are numerous. The technology could facilitate market access for agricultural producers and improve information flows. It opens up new market opportunities, particularly in a highly uncertain environment. In addition, the e-commerce systems typically provide the corresponding payment systems which mitigate the majority of subjective risks in agricultural trade for all the parties in transactions (Lu, 2018). The technologies also indirectly contribute to the efficiency of agricultural trade through their application in transport and logistics. The continuation of the use of technology in agricultural trade propagated by the pandemic would likely be beneficial in the future, as it would improve the resilience of agricultural value chains in the event of future crises, benefiting all the participants (Zhu, Chou, & Tsai, 2020). However, this would require further development of the needed infrastructure, as well as education in the use of technologies, particularly in agriculture, where the full potential of the application of information and communication technologies is yet to be utilised.

Some agricultural firms reacted to the uncertainty the pandemic caused in international trade by redirecting their sales toward domestic markets. Some estimates show that nearly half of agricultural firms in China adopted a variant of this strategy (Lin & Zhang, 2020).

Considering that one of the most commonly cited problems during the pandemic in regards to foreign trade was the problems with financing it comes as little surprise that many agricultural firms put a significant effort into diversification of financing sources. An important channel for reducing financing costs was government support. It mostly came in the form of tax breaks and subsidies. This support was regionally unequally distributed to agricultural producers. Financial support was the most difficult to implement in the lower-income regions due to financial constraints. At the same time, the agricultural producers in these regions required the most support to maintain their participation in international trade.

Foreign direct investment was another method of addressing the challenges during the pandemic. Preliminary survey data suggest that agricultural firms seldom followed this strategy (Lin & Zhang, 2020). This could reflect the expectation of typical agricultural firms that the crisis will be resolved in the short to medium term, thus not requiring relocation of business activities overseas. However, sovereign wealth funds and state-owned enterprises might consider foreign land acquisitions a way to strategically secure a stable supply of agricultural products (Kastratović & Vasiljević, 2018). A more detailed analysis of this is not possible at this moment due to data

considerations but could prove an interesting avenue for future research on the effects of the Covid-19 pandemic in agriculture.

Some agricultural firms considered the change in the economic environment due to the Covid-19 pandemic as an opportunity to increase exports and supply new markets in which the domestic supply decreased because of disruptions. However, these increases in overseas sales were generally only short-term responses to the initial shock and disequilibrium. It is expected that this channel of sales growth for agricultural firms is unsustainable in the long run as the global economy returns to its equilibrium (Kerr, 2021).

Finally, some firms were forced to undertake radical responses to the crisis. In the circumstances where the good could not be transported to their buyers, some agricultural producers opted for dumping the stocks. This meant either a complete loss of their production or sale at discounted prices. The result was an increase in food waste, particularly at the beginning of the pandemic (Roe, Bender, & Qi, 2021). Others opted for restructurings and layoffs. The ones which were insufficiently productive and adaptable were forced to file for bankruptcy.

To sum up, the micro-level evidence supports the general macro-level conclusions outlined previously. The effects on the micro-level are mixed and oftentimes heterogeneous across subsectors and regions. Staple food producers maintained markedly strong and stable performances throughout the pandemic. Agricultural production linked to medical and pharmaceutical use also witnessed a surge in performance. In other sectors, the negative effects of pandemics were more or less offset but the adaptation strategies, which could permanently increase the resilience of the agricultural sector in the case of any similar crises in the future.

7. Trade Policy Response

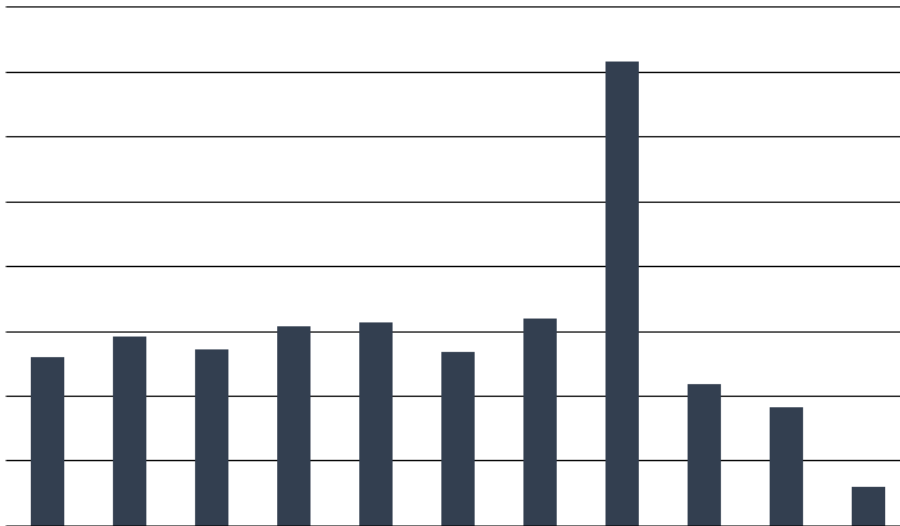
Governments throughout the world reacted to the pandemic by introducing various policy measures. Some of these measures were aimed at preventing the spread of the virus. The others had a goal of alleviating the problems caused by the virus. In general, policymakers properly understood the importance of agriculture and took the strategic importance of the sector into consideration when defining the policy measures. Therefore, the borders, for the most part, remained open for agricultural trade, contrasting the restrictions imposed on the movements of people.

A subset of the policy measures is directly related to trade. The dynamics of non-tariff measures introduction concerning agricultural trade is presented in Figure 7. The data suggests that the total number of problematic measures did not escalate during the pandemic. In fact, the number of newly introduced measures was lower compared to all the other observed years in the period of the analysis. The newly introduced measures covered approximately 4% of the total volume of agricultural trade (Evenett et al., 2022). Most of the initial measures were directed toward medicinal products. It appears that most governments decided against imposing additional trade barriers in order not to worsen the situation and uncertainty faced by agricultural producers.

The trade-related measures were mostly introduced in the form of export restrictions. The main motivation behind the restrictions was to limit exports and, thereby, increase the availability of agricultural products in domestic markets. Policymakers avoided the proliferation of these measures, limiting their geographic coverage. Due to this, the measures affected only a minor

portion of agricultural trade. Namely, Evenett *et al.* (2022) estimated that export restraints affected around 3% of total agricultural trade during the first three quarters of 2020.

Figure 7: Newly Introduced Non-Tariff Measures affecting Agriculture (2011-2021)



Source: Authors’ calculations based on the Global Trade Alert data (accessed on 10 September 2022)

Note: The values are the count of newly introduced measures in a given year globally. Only “red” and “amber” type measures covering agricultural products were considered.

The trade-related measures were mostly introduced in the form of export restrictions. The main motivation behind the restrictions was to limit exports and, thereby, increase the availability of agricultural products in domestic markets. Policymakers avoided the proliferation of these measures, limiting their geographic coverage. Due to this, the measures affected only a minor portion of agricultural trade. Namely, Evenett *et al.* (2022) estimated that export restraints affected around 3% of total agricultural trade during the first three quarters of 2020.

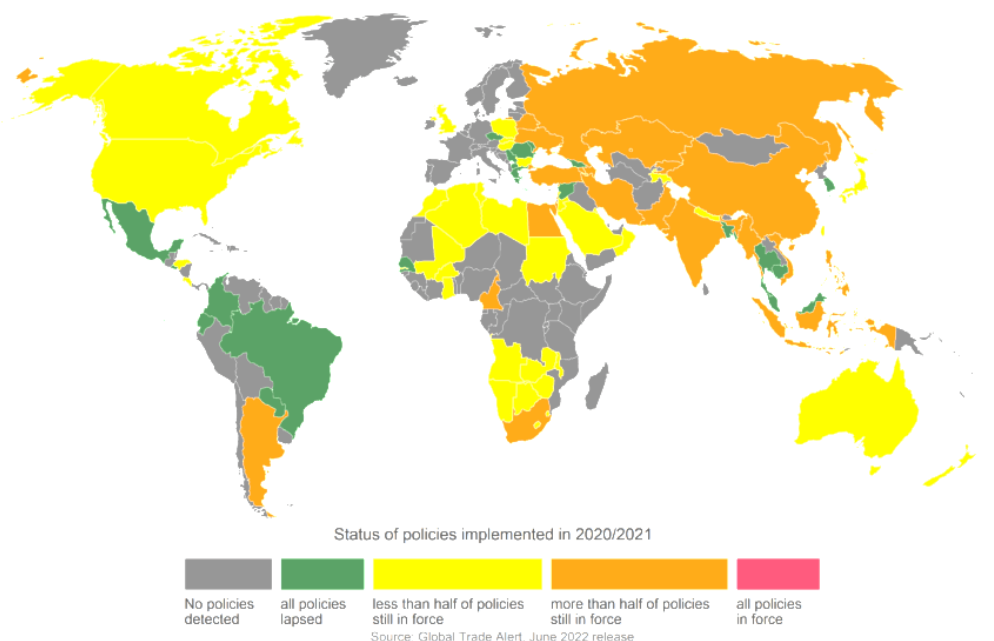
Despite the limited distortive effects of the introduced measures, their use during the pandemic revealed significant dangers and limitations of the multilateral trading system organised under the auspice of the World Trade Organisation. Namely, the General Agreement on Tariffs and Trade stipulates no restrictions on the use of export tariffs. This makes the control of the abuse of export tariffs problematic (Cardwell & Kerr, 2014). Although only the export tariffs are allowed under the current system, while the prohibitions of exports are forbidden, economies can set export tariffs prohibitively high, effectively banning exports while remaining within the framework defined by the World Trade Organisation (Scholefield & Gaisford, 2007). Because of the idiosyncratic nature of agriculture and agricultural trade, the current multilateral system additionally allows the economies to temporally introduce export restrictions for agricultural products in order to address critical shortage problems.

There were attempts to resolve aforesaid issues through the use of soft law (Kerr, 2020). Namely, the economies are obliged to take into consideration the food security issues of their trade partners when introducing export restrictions for agricultural products. If such restrictions potentially cause problems for their trade partners, there is a requirement to consult with the said partners before introducing the measure. However, history shows that in times of crises, economies do not

follow these soft law provisions, but rather opt to solve their acute food security issues with little regard for the interests of their trade partners (Mitra & Joslin, 2009).

Most of the trade-related measures were introduced as a temporary solution during the pandemic. The data shows that the duration of these measures often goes beyond the initial projections. This is illustrated in Figure 8.

Figure 8: Status of Covid-19 Trade-Related Export Restrictions in Agriculture (2022)



Source: Global Trade Alert (2022) (accessed on 10 September 2022)

The figure shows that in the majority of countries, the initially introduced export restrictions for agricultural products still persist in some form. There are few examples where the introduced measures were kept to this date in entirety. However, most of the Asian countries, as well as Egypt, Cameroon, South African Republic, and Argentina maintained more than half of the Covid-19-related export policies. In much of North America, Europe, Oceania, and Africa, less than half of export restrictions persist today. Countries of South America, South-eastern Europe, and South-eastern Asia abolished all the export restrictions introduced as a response to the Covid-19 pandemic. This suggests that there is a danger of persisting increased interventionism in agricultural trade in the future, particularly in the unstable environment and prospective crises.

8. Conclusions

In this paper, we examined to effects of the Covid-19 pandemic on agricultural trade and its implications for food security and trade policies. Using the most actual data available, we analysed the changes in agricultural production, demand, markets, trade, and trade policies, accentuating the major changes occurring during the pandemic. We showed that agricultural trade remained resilient throughout the period of the pandemic, surpassing the non-agricultural trade in terms of growth.

The negative effects of the pandemic were contained in particular regions and subsectors. Trade decreased most severely in the case of higher value-added and non-essential agricultural products,

due to higher demand elasticity, demand-side disruptions, labour shortages, and logistical problems. In contrast, the staple food trade increased, due to inelastic demand and the recomposition of consumption structure. Countries with more capital-intensive, productive, and robust agriculture experienced an expansion of the sector and agricultural exports, whereas the countries with more vulnerable agriculture endured the contraction of the sector, followed by increased agricultural imports or, in some specific instances, disengagement from agricultural trade.

We identified significant negative effects of the Covid-19 pandemic on global food security. Resilient agricultural trade somewhat alleviated the problem, although there was a notable increase in the number of food insecure people in nearly all observed regions. The pandemic and the related restrictive measures disrupted certain demand channels and caused panic stocking up of agricultural products. At the same time, there were considerable input supply disruptions and logistical problems with the distribution of agricultural products, particularly in some subsectors. This instigated an intensive growth of food prices, further worsened by the current instabilities in the economic environment and the energy crisis. This negatively affects food availability, affordability, utilisation, and stability.

The pressure placed upon the agricultural producers by the pandemic forced them to react and adapt to a growingly uncertain environment. The use of information and communication technology had a particularly important role in this. The pandemic revealed the potential of technologies' application in the sector and the need to further support digitalisation within food value chains in order to improve their functionality and resilience. This requires investment in the development of the necessary infrastructure and education as well as the promotion of entrepreneurial activities, particularly in developing countries.

The pandemic also raised a question of the future of globalisation in agriculture. Before the pandemic, agriculture was amongst the most protected sectors. There was no truly global specialisation as the individual economies aimed to maintain the domestic production of agricultural products, particularly staple food. However, there were efforts to liberalise agricultural trade, especially within the Doha round of negotiations among the World Trade Organisation members. Dangers related to food security could prompt the economies of the world to revert their stance on the globalisation of agriculture and their integration in the world economy, seeking higher levels of self-sufficiency in this strategically important sector. This could be followed by introducing measures to reduce the dependence on foreign suppliers of agricultural products and promote domestic agricultural production. This path could be dangerous, as the lobbyists for these measures have additional motives, and the measures intended to stabilise the agricultural sector could easily spread to other sectors. This would, in turn, reduce cooperation in the world economy, defragmentation of global value chains, and ultimately result in the loss of global welfare previously achieved through free trade. Thereby, it is questionable to which extent this would mitigate the food security risk, as relying on only one (domestic source) of agricultural products still entails the risks of local crises and shocks. Therefore, deeper integration and cooperation and improved resilience of agricultural value chains appear to be a better option for averting similar food crises in the future.

The initial trade policy response concerning agricultural trade was mostly directed toward export restrictions. This revealed the necessity to regulate the use of these measures in the future, particularly in the event of food crises. Stronger discipline in their use needs to be imposed in order to avert a more grievous deglobalisation of the sector. Objectively, economies need to exert

some control over their food supply to avert food shortages, so some manoeuvring space needs to be left for their policymakers to react in such situations. Otherwise, developed countries could outbid developing countries on the world market and jeopardise their food security. However, this needs to be supervised by the World Trade Organisation with a similar system used for other trade-related measures in order to prevent balance the risks of the trade partners are enforce consideration of the interests of all parties. The first steps towards this direction have already been made by the Ottawa group of economies within the World Trade Organisation. The Ottawa group made the first formal proposal for the regulation of export controls. However, current perspectives of the major reform are bleak, considering the lack of support from the major economies, notably the United States and China. In addition, it is worrisome that the self-sufficiency and protectionist motivations conflict with the agenda of the Doha round, which stalled even before the latest food crises. Current developments increase the uncertainty of the round's eventual successful conclusion

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REMITTANCES, MIGRATION, AND SOCIAL NORMS: AN ANALYSIS OF WOMEN'S ECONOMIC EMPOWERMENT IN KOSOVO

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Abstract

Although the gender gap in educational attainment has reversed in Kosovo, that in labour market outcomes favouring men still persists. This paper examines the impact of remittances, migration and social norms on the gender gap in labour force participation, focussing on women's economic empowerment. To overcome the shortcomings of biprobit in controlling for endogeneity in remittances and migration, this study deploys mvprobit in addition to biprobit. Overall, results suggest that social norms, rather than remittances and migration determine the gender gap. Support, though limited, is found for the disincentive effect of remittances, and for the disruptive effect of migration plans. Results from Fairlie's (2003) decomposition technique show that remittances and migration reduce the gender gap. The key policy implication of the results is that policy-makers should address social norms within Kosovan households in order to indirectly channel the effects of remittances and migration into the enhancement of women's economic empowerment.

Key words: remittances, migration, social norms, gender gap, labour force participation, Kosovo

JEL Classification: F22, F24, J01, J16, O15

Introduction

Kosovo has a large migrant population which has historically played an important role for the Kosovo's economy and society. About one third of the Kosovan households are reported to have one family member abroad (Riinvest, 2007). Depending on the sources available, the number of the Kosovo migrant population is estimated to be at or below 800,000 (ASK, 2011 Census; Ministry of Diaspora, 2013). The majority of Kosovan migrants reside in Germany and Switzerland followed by Italy, Austria and Sweden. Depending on the data sources, out of total, the share of migrants is reported in a range between 32% and 47.5% for Germany and between 15% and 23% for Switzerland (Riinvest, 2007; UNDP, 2010; World Bank, 2011; EDG, 2012).

Data on migrant movements after 1999 show that emigration from Kosovo reached its peak in 2014/2015 and it was mostly illegal/irregular (BPRG, 2020). The number of illegal migrants has been going down since 2015 whereby recent migration is mostly legal/regular and is done for reasons such as family reunion, employment, and education (ASK, 2021; Eurostat, 2020). Although during this period, Kosovo has recorded steady economic growth and has moved up to the upper middle-income group of countries, a considerable share of those who tend to emigrate from Kosovo wish to do so for better employment prospects.

The remittances sent by migrant workers represent one of the most important sources of finance for Kosovo's economy. In 2020, personal remittances accounted for 18.6% of the Kosovo's GDP ranking Kosovo in the top remittance receivers in the region (WB, 2022). The Central Bank of Kosovo reports an annual increase of 17.7% of the remittances received in 2021 whereby the largest amount of remittances is sent by the Diaspora in Germany and Switzerland with 39.2% and 18.9%, respectively (CBRK, 2022)

In terms of expenditure types, remittances received in Kosovo are mostly used for consumption with a small share used for business investment (Riinvest, 2007; UNDP, 2012). Although the share of remittances used for business investment is small, evidence suggests that remittances have a positive impact on entrepreneurship (Kotorri et al., 2020). Also, WB survey data (2011) indicate that poverty rates in Kosovo would have been higher without remittances, making remittances an important mechanism for poverty reduction. However, remittances can also have a negative impact on the recipient economies by creating dependencies and reducing incentives to work, expressed through lower labor market participation and higher reservation wages. Although the UNDP and KAS data do not offer clear evidence about the impact of the remittances on the reservation wages there is evidence that remittances impact unemployment and labor participation rates of the recipients (Kotorri, 2020). The MCC LFTU Survey results show that labor participation rate among remittance receiving household members is lower than for those living in households which do not receive remittances.

Overall, Kosovo has a high unemployment rate reported at about 26% in 2020, and it is higher for women and youth (32.3% and 49%, respectively). Besides a very high youth unemployment rate, one of the weakest labor market indicators is low participation rate of women reported at 21% (ASK, 2021). This low activity rate is explained through social and economic factors such as prevailing social norms whereby women are expected to take care of the family responsibilities; limited access to accessible and affordable childcare services; the maternal leave seen as high cost by private employers; and lack of access to investment and finance opportunities (WB, 2018).

Given the widespread access to migration experiences and remittances among Kosovan households, as well as the overall improvement in labour market outcomes, it is surprising that the labour market activity among women has not increased in the last two decades. This makes Kosova an ideal case to study, and thus raises our question of investigation: "in a context of prevailing traditional social norms, how and to what extent do remittances and migration affect women's labour market activity and through that women's economic empowerment in Kosova's traditional society?" This question has not been addressed in the context of Kosova in the existing literature. To fill this gap in the literature we investigate this relationship.

The analysis is organised as follows. In the next section, we provide a review of previous relevant empirical investigations, followed by a discussion of data and methodology in section three. Following the presentation of the results on the impact of migration and remittances, and social norms on labour force participation, in section five the results on the key determinants of the gender gap are elaborated based on Fairlie's (2003) decomposition technique. In the end, concluding remarks and policy implications are discussed.

Literature review

As both the effect of remittances and migration on labour supply are theoretically ambiguous, it is not unexpected that the existing empirical evidence is inconclusive. Further, the mixed empirical evidence is not surprising also considering the heterogeneity across studies regarding economic models, empirical techniques, and socio-economic and cultural idiosyncrasies of the countries investigated. Given this vast heterogeneity, to set the grounds for our empirical strategy, we have structured the literature review by economic model, amalgamating the reviewed studies into three groups: (i) that controlling for remittances only, (ii) that controlling for migration only, and (iii) that controlling for remittances and migration.²³ Within each group of studies, we critically analyse the empirical techniques used and compare their respective empirical results. Given the focus on women's economic empowerment, throughout, evidence of gender differences in the effect of remittances and/or migration on labour supply will be pointed out.

Studies belonging to the first group, control for remittances only, neglecting the potential specific impact of migration on labour supply. Thus, they fail to empirically disentangle the effect of remittances from that of migration. A common feature of this strand of literature is that it uses the neoclassical model of labour-leisure-choice, where labour and non-labour income are considered as the key determinants (Acosta, 2006; Acosta, 2020; Asiedu and Chimbar, 2020; Cox-Edwards & Rodriguez-Oreggia, 2009; Justino and Shemyanka, 2012; Rodriguez and Tiongson, 2001). With leisure assumed a normal good, remittances, being non-labour income, are expected to relax the budget constraint. As a result of the income effect, remittances increase the reservation wage and reduce the opportunity cost of leisure and/or home production, and thus reducing the propensity of labour market participation or the supply of labour. This is referred to as the "disincentive effect". In case the opposite holds, remittances will exert an incentive effect. Such an argument is provided Kotorri, Krasniqi, and Dabic (2020). Being statistically different from home-country income, remittances are independent of the risk of home-country earned income, and as such reduce the overall household risk, increasing the likelihood of using one's labour in a family business. Consequently, the impact of remittances is theoretically inconclusive. As common in analyses of labour market choice, studies control for a set of individual and community characteristics. Further, they integrate the impact of household characteristics, though, in a rather ad hoc manner.

Within this strand, Acosta (2006) and Sousa and García-Suaza (2018)²⁴ deployed propensity score matching (henceforth PSM) to account for self-selection into migration. This technique, however, only enables a comparison based on observable characteristics, failing to address the endogeneity between remittances and labour supply. The former study found support for the disincentive effect of remittances overall and for both genders separately in El-Salvador. The latter reported that, whilst remittances reduce labour participation for both men and women, they increase self-employment in Guatemala, El Salvador and Honduras.

Trying to avoid the shortcomings of PSM, Piracha, Randazzo, and Vadean (2013) and Murakami, Yamada, and Sioson (2021), and Khan and Valatheeswaran (2016) deployed an instrumental variable approach (henceforth IV approach). This technique, though, is criticised on the grounds that the instruments or exclusion restrictions used are either theoretically correlated with the dependent or weak. Support for the disincentive effect hypothesis is provided by all three studies. Further, the first study found that remittances increase self-employment in Tajikistan.

²³ This group of studies either include migration and remittances in separate equations, or include both in the same equation but control for endogeneity only with regard to one of these variables.

²⁴ Acknowledging the importance of IV approaches to address endogeneity, Sousa and García-Suaza (2018) used PSM due to lack of data.

Khan and Valatheeswaran (2016) reported that remittances increase the likelihood of self-employment among Keralan men, whilst they increase the likelihood to engage in household duties among women and left-behind wives.

A different empirical strategy is deployed by Acosta (2020). He accounted for endogeneity by applying a fixed effects approach to panel data on rural El Salvador. His results suggested that living in a remittance-recipient household increases the probability of on-farm activity among females. The effect is negative, yet insignificant, for males. In contrast, he found that remittances have a negative impact on self-employment among males only. Yet, as acknowledged by the author himself, although panel analysis addresses time-varying unobserved heterogeneity within a household, it fails to account for time-varying unobserved heterogeneity factors that are potentially correlated with labour supply.

Unlike other studies, Petreski (2019) deploys a behavioural tax and benefit microsimulation model to account for endogeneity. His empirical findings suggest a positive impact of remittances on part-time labour market participation among Macedonian singles. Analysing this correlation by gender, he found that remittances reduce the likelihood of participation for both males and females – but only females living in poor households.

The second strand of the literature, acknowledging the income-effect of remittances, have developed three different arguments regarding the impact of migration. First, they point to the “disruptive effect” of migration, referred to also as the “labour substitution effect” (Braga, 2009; Hanson, 2005; Amuedo-Dorantes and Pozzo, 2006; Mendola & Carletto, 2012; Goerlich, Omar, and Trebesch, 2007; Rodriguez and Tiongson, 2001). Accordingly, the emigration of household members may increase the labour demand for both home production and market activities from the remaining members, inducing an intrahousehold reallocation of labour. Conditional on migrants and non-migrants being substitutes or complements, the impact of migration on the labour market activity of remaining members is a priori ambiguous.

Chen (2006) and Mendola and Carletto (2012) extend this theoretical discussion, recognising that migration may induce a change in the intrahousehold allocation of responsibilities and decision-making power, changing gender roles, and thus inducing the economic empowerment of female members. Accordingly, in case of male-migrants, female members would have to reallocate their time for work and dependent care, simultaneously, benefitting from stronger decision-making power regarding the allocation of household resources. Thus, female members would be more empowered to give priority to the maximization of the returns to their personal labour inputs. This is particularly likely in situations of non-cooperative decision-making resulting from imperfect monitoring by the migrants (Chen, 2006), and in traditional societies (Mendola & Carletto, 2012).

Mixed results are provided by studies using propensity score matching. Restricting the sample to Egyptian women, Binzel and Asaad (2011) reported that migration reduced women’s likelihood of paid employment in both urban and rural areas. They also found that women living in migrant households in rural areas are more likely to engage in unpaid and subsistence work, while in urban areas they are less likely to be in subsistence work.

Results are inconclusive also among studies deploying an IV approach. Acosta (2020) found that both males and females living in a migrant household in rural El Salvador are less likely to engage in off-farm activities, though the effect is insignificant. Further, he found that migration increases on-farm activity among females and domestic labour participation among males. Using parametric and non-parametric IV approaches on a sample of Egyptian women, Binzel and Asaad (2011) suggested that migration increases the likelihood of subsistence work in urban areas, whilst it increases that of unpaid work in rural areas.

Piracha, Randazzo, and Vadean (2013) and Murakami, Yamada, and Sioson (2021), instrumenting for migration through a control function approach, concluded that in Tajikistan

migration negatively affects the likelihood of paid employment and labour participation respectively. Similar results are reported in Khan and Valatheeswaran (2016). Deploying an IV approach, they provided evidence that migration reduces the likelihood of paid employment for men in Kerala, whilst it makes women and left-behind wives more likely to engage in household duties. Piracha, Randazzo, and Vadean (2013) and Khan and Valatheeswaran (2016) also found that migration increases the probability of self-employment. But in the latter study this only holds for men.

Goerlich, Mahmoud, and Christoph (2007) and Abdulloeva, Gang, and Yun (2014) deploying bivariate probit to address endogeneity found that migration reduces the probability of labour participation in Moldova and Tajikistan respectively. The former study highlighted that the negative effect is stronger for men. In the latter study, evidence of the decomposition technique suggests that migration reduces the gender gap in participation, and that the gap is mainly attributed to behavioural differences between men and women. In a sensitivity analysis using multivariate probit, Goerlich, Mahmoud, and Christoph (2007) add the option of being in schooling. In his setting, however, they found no support for the negative effect. Moldovans that have migrant members are rather more likely to be inactive students. This likelihood is higher among women.

The third strand of the literature, to which our investigation belongs, recognises that theoretically the mechanism through which remittances affect the allocation of time and other resources within households, in particular related to the labour market, is different from that of migration (Chen, 2006; Dermendzhieva, 2010; Mendola and Carletto, 2012; Rodriguez and Tiongson, 2001). Following the forgoing theoretical discussion, the effect of remittances is in principle different from that of migration. This supports the argument that these two variables should be introduced separately. Unlike other studies, which only theoretically distinguish between these two effects, Rodriguez and Tiongson (2001), Dermendzhieva (2010) and Mendola and Carletto (2012), and Asiedu and Chimbar (2020) disentangle the impacts of these two variables both theoretically and empirically. Whilst the first study deploys a probit approach, the other three studies use an IV approach. Mendola and Carletto (2012) account only for migration-related endogeneity, neglecting the potential remittances-induced endogeneity, whilst Asiedu and Chimbar (2020) instrument only for remittances. Mendola and Carletto (2012) found that Albanian women are less likely to be in paid employment and more likely to supply unpaid work if they currently have a migrant member abroad. But past migration experience is found to increase the probability of self-employment and reduce the supply of unpaid work among women. Support for the negative effect of migration on labour activity is provided in Rodriguez and Tiongson (2001) for Philippine men and women. In contrast, Dermendzhieva (2010) and Asiedu and Chimbar (2020) found a positive correlation between migration and labour supply of Albanian men - aged between 46 and 60 – and Ghanaians, respectively. Mendola and Carletto (2012) found that remittances increase the likelihood of self-employment using the whole sample. Dermendzhieva (2019) and Rodriguez and Tiongson (2001) reported evidence of a negative impact on labour activity for both genders. Similar results are reported in Asiedu and Chimbar (2020) for the whole sample, but no effect when analysing women and men separately. Acosta (2006) took a slightly different approach, restricting the sample to migrant households. Using both PSM and an IV approach, his results showed that remittances negatively influence labour participation only among women in El Salvador. Acosta (2020) and Khan & Valatheeswaran (2016), despite recognizing the relevance of both variables, empirically analyses their impacts through separate regressions. Hence, their results are discussed in the previous strands of literature.

In sum, both within groups and across groups of studies, empirical results are mixed owing probably to differences in terms of economic model, econometric technique, and country

of investigation. In what follows this topic will be investigated using data on Kosova. There are several ways in which this analysis contributes to the existing literature on the relevance of migration and remittances for labour force participation. It is the first to investigate this relationship using Kosovan data. The other novel feature is that it deploys multivariate probit to address the interdependence among the three variables of interest, namely labour force participation, remittances and migration plans. Thus, it is the first to overcome the limitations of biprobit in addressing the endogeneity regarding all three variables of interest simultaneously. Next, it controls for subjective variables aiming to capture the effect of individuals' mindsets regarding the role of women and the effect of asymmetries in decision-making power within the household on labour force participation. Further, focussing on the role of migration and remittances on women's economic empowerment through their impacts on labour force participation, it deploys Fairlie's (2003) decomposition technique to analyse the overall gender gap in labour market participation, and to examine to how and to what extent the independent variables contribute to this gap.

Data and Methodology

This empirical investigation draws on data from the Labour Force and Time Use Survey conducted in 2017, with 8,533 households resulting in 32,742 individuals. Yet, extended interviews were conducted with 8,604 individuals only. Given the aim of this research, the empirical investigation is based only on the individuals who participated in the extended interviews. The survey is sponsored by the Millennium Challenge Corporation (MCC) in Kosovo and it is in line with the Eurostat methodology (MCC LFTUS, 2017). It provides a variety of variables allowing for the investigation of the determinants of labour market participation by focusing on gender differences. The survey quality is satisfied by the number of households participating, representing the population by region, city, ethnicity, gender, and other individual characteristics.

This research examines the impact of migration, remittances and social norms on women's economic empowerment by looking at two key outcome variables: labour force participation and type of employment. The former is given by binary variable, which suggests that approximately 40% of respondents participate in labour; similarly, the latter is generated from a categorical into dichotomous variables indicating the specific type of employment. Table 1 provides definitions and summary statistics of the variables employed in the model.

Explanatory variables, namely remittances and migration, are employed in the analysis as dummies retrieved from two main questions of interest, which are "did you receive remittances in the last twelve months" and "are you planning to migrate in the near future." Approximately two-third of the respondents receive remittances, and 15 per cent have migration plans.

As this study aims to shed light on the effect of social norms on labour force participation, two binary variables are created, equaling one if the individual can influence the decision on education spending to a great extent or very much; and if the individual declares that it is more important for men to be employed than women. Descriptive statistics indicate that most individuals perceive they can decide on education, while approximately 54% think that men's employment is more critical than women's employment. This, *inter alia*, implies that patriarchal mentality dominates Kosovar society, although there has been distinct progress in the last two decades.

Variables for age are included in the regression model as dummies, representing seven different age cohorts. The average age was 40 years for women and men; half of the sample is represented by women, and 51% live in rural areas. A dichotomous variable shows that 61% of individuals are married or in a factual relationship, while roughly 4% are divorced.

Education plays a significant role in women's economic empowerment. To evaluate the impact, the paper employed four binary variables indicating if the individual has completed upper secondary general education, upper secondary vocational education, post-secondary vocational education, and tertiary or Ph.D. level. Women appear to have less education completed compared to men, with only 19% holding tertiary degrees, compared to approximately 38% of men. However, these dissimilarities tend to vanish among younger individuals, especially those under 30 years old. In addition, a continuous variable shows the years since the individual completed the highest level of education.

Table 1. Variable Label, Variable Definition, and Descriptive Statistics

Variable	Description	Obs	Mean	Std. Dev.
lfp1	Equals 1 if individual participates in labour market	32837	.401	.49
Hhsize	Household size	32848	6.025	2.81
Jointdecisionedu	Equals 1 if individual can influence the decision on education spending to a great extent or very much	8537	.899	.301
menemployment	Equals 1 if individual states that it is more important for men to be employed than women	8553	.539	.498
age30 34		32848	2.794	9.024
age35 39		32848	2.986	10.081
age40 44		32848	3.481	11.576
age45 49		32848	3.713	12.682
age50 54		32848	3.991	13.844
age55 59		32848	3.902	14.383
age60 64	Equals 1 if the individual is women; 0 otherwise	32848	3.306	13.929
Women	Equals 1 if the individual completed upper secondary general education; 0 otherwise	32848	.507	.5
edu 6	Equals 1 if the individual completed upper secondary vocational education; 0 otherwise	32848	.15	.357
edu 7	Equals 1 if the individual completed post-secondary vocational education; 0 otherwise Number of years since highest education completed	32848	.259	.438
edu 8	Equals 1 if the individual completed tertiary or PhD education	32848	.029	.167
ed year completed	Equals 1 if the individual is married or in factual relationship	29562	21.054	17.826
eduhigher	Equals 1 if the individual is widowed	32848	.101	.301
marital 4	Equals 1 if the individual is divorced or legally separated	32848	.611	.487
marital 5	Equals 1 if the individual has migration plans Equals 1 if the individual lives in Prishtina –	32848	.066	.248

marital 6	capital city Equals 1 if the individual lives in a rural area	32848	.004	.06
rem01		32848	.789	.408
migexplan		8417	.14	.347
Prn		32848	.148	.355
TA		32848	.398	.49

Source: MCC LFTUS 2017, authors' calculations

There are well-established arguments in the literature about both remittances and migration plans being simultaneously determined with individuals' decisions to participate in the labour market. This methodological issue cannot be adequately addressed by bivariate probit (henceforth biprobit), as it only controls for the endogeneity of one of the variables at a time. To overcome these shortcomings of biprobit, this research deploys multivariate probit (mvprobit). Empirically, we deploy both techniques, bivariate probit and multivariate probit (mvprobit). Biprobit is only deployed for comparability of results with those of other studies.

In the biprobit analysis, two models are estimated, each consisting of two equations, whereby the individual simultaneously decides on: (i) joining the labour market and receiving remittances, referred to as Model 1, and (i) joining the labour market and planning to emigrate, referred to as Model 2. Hence, the models consist of two equations where the binary dependent variables measure the probability of the individual joining the labour market on one side, and the probability of receiving remittances in Model 1 and the probability of planning emigration in Model 2, respectively. Given the binomial nature of the interdependent dependent variables, biprobit is deployed which controls for unobserved heterogeneity and endogeneity. Three groups of determinants are expected to influence the interdependent decisions: individual characteristics, household characteristics, and location-related characteristics. As elaborated in Greene (2003 and 2012), the general specification for the two equations model is:

$$\begin{aligned}
 y_1^* &= x_1' \beta_1 + \varepsilon_1, & y_1 &= 1 \text{ if } y_1^* > 0, 0 \text{ otherwise} \\
 y_2^* &= x_2' \beta_2 + \varepsilon_2, & y_2 &= 1 \text{ if } y_2^* > 0, 0 \text{ otherwise} \\
 E[\varepsilon_1 | x_1, x_2] &= E[\varepsilon_2 | x_1, x_2] = 0 \\
 \text{var}[\varepsilon_1 | x_1, x_2] &= \text{var}[\varepsilon_2 | x_1, x_2] = 1 \\
 \text{Cov}[\varepsilon_1, \varepsilon_2 | x_1, x_2] &= \rho
 \end{aligned}$$

The instances in which y_1 equals one are demonstrative of the individual participating in the labour force, while y_2 equals one if the individual receives remittances. The dependent variables y_1^* and y_2^* are the unobserved latent variables, while x_1 and x_2 denote the vector of observed explanatory variables representing individual characteristics, household characteristics, and a set of location-related characteristics.

Given the theoretical arguments about both remittances and migration plans being endogenously determined with labour supply decisions, this analysis deploys mvprobit. This technique overcomes the shortcomings of biprobit in that it controls for the endogeneity in both remittances and migration within the same model. Greene (2012) argues that mvprobit is an extension of biprobit whereby additional equations, that is, dependent variables, are added. Accordingly, Model 1 is extended by adding an equation on the probability of planning migration. So, a three equations model is estimated whereby the individual simultaneously decides on joining the labour market, receiving remittances, and planning to emigrate. There are three, jointly determined, binary dependent variables, which measure the probability of the individual joining the labour market, receiving remittances, and planning emigration.

Empirical results

Prior to the interpretation of results, it is important to note that given the focus on women's economic empowerment, unlike the studies reviewed above, this analysis explicitly controls for the role of social norms in labour supply decisions. Empirically, this is examined using two subjective variables "jointdecisionedu" and "menemployment" which control for whether the individual perceives that s/he can influence the decision on education spending to a great extent or very much and whether the individual perceives that it is more important for men in the household to be employed than women, respectively. As the aim is to investigate the relevance of migration, remittances and individuals' mindsets for the economic empowerment of Kosovan women, the interpretation of empirical results will mainly be limited to these key variables. For reasons given above, the empirical analysis deploys both biprobit and mvprobit. Results will be presented separately for each technique. Following are the biprobit results.

Bivariate probit

The table below reports the results from the biprobit estimations. Model 1 represents the specification whereby the decision on labour force participation is jointly determined with that on the receipt of remittances, and Model 2 is the specification in which the decision on labour force participation is interdependent with the decision to plan emigration. For Kosovans, results indicate that individuals' mindsets/ social attitudes significantly influence labour supply decisions. Support is found for the "disincentive effect" of remittances, whilst results are mixed regarding the impact of migration plans. For brevity, Model 1 results will be interpreted, and only in case of important differences Model 2 results will be referred to. Also, throughout, reference will be given to the results from biprobit analyses by gender.

Table 2. Bivariate Probit Results on the Determinants of Labour Force Participation

Variables	Model 1			Model 2		
	Labour Force Participation and Remittances			Labour Force Participation and Migration Plans		
	All	Women	Men	All	Women	Men
Key variables						
Remittances	-0.06 (0.29)	-0.25 (0.51)	0.31 (0.52)	-0.15 (0.04)***	-0.076 (0.06)	-0.217 (0.07)***
Migrationplan	-0.01 (0.05)	0.27 (0.08)***	-0.28 (0.07)***	-0.28 (0.30)	-0.299 (0.42)	-0.60 (0.44)
Jointdecisionedu	0.11 (0.03)**	0.006 (0.07)	0.27 (0.09)***	0.11 (0.05)**	0.005 (0.064)	0.27 (0.09)***
Menemployment	-0.132 (0.001)***	-0.18 (0.04)***	-0.06 (0.05)	-0.13 (0.03)***	-0.17 (0.04)***	-0.06 (0.05)
Elderly dependents	-0.68 (0.142)***	-3.94 (658.7)	-0.83 (0.16)***	-0.74 (0.161)***	-4.25 (1055)***	-0.93 (0.19)***
Gender	-0.909 (0.04)***			-0.938 (0.04)***		
Higher education					0.87 (0.11)***	0.35 (0.11)***
Individual characteristics						
Household characteristics						
Location-related characteristics						
Constant	-0.756	-0.63	-0.19	-0.68059	-0.54	0.09

	(0.127)***	(0.22)***	(0.19)***	(0.11)***	(0.17)***	(0.21)
Rho	-0.05	0.08	-0.32	0.2	0.29	0.21
	(0.168)	(0.29)	(0.29)	(0.18)	(0.22)	0.25
Likelihood-ratio test of rho=0: chi2(1) =	0.0877	0.074	1.004	0.4	1.56	0.66
Observations	7,828			7,828		

Notes: Robust standard errors in parentheses. Levels of significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

The a priori effect of remittances on labour supply is ambiguous. Similar to the majority of studies reviewed, results provide support for the disincentive effect hypothesis, suggesting that remittances lead to Kosovans having a higher reservation wage, and thus a lower probability of labour force participation. Yet, the coefficient on remittances is statistically significant only in Model 2. Results from the analysis by gender indicate that remittances have a disruptive effect on women, but an incentive effect on men; however, the coefficients are statistically insignificant. In Model 2, support is found for the disruptive effect hypothesis for both genders, but the impact is statistically significant only for men.

For Kosovans, Model 1 results indicate that planning to emigrate have a higher likelihood of participating in the labour force suggesting that they invest in human capital in the form of work experience to enhance their chances of paid employment abroad. Although Model 2 results indicate the opposite effect, the coefficient is statistically insignificant. Performing this empirical analysis for women and men separately,²⁵ results suggest gender differences in the effect of migration plans; the effect is positive for women and negative for men, and statistically significant in both cases. Model 2 results, again, differ from those of Model 1 in that the impact is negative for both genders, but statistically significant only for women.

Results from both specifications point to the gender gap in labour force participation. The variable controlling for whether the individual is a woman is negative and highly statistically significant, suggesting that women have a lower propensity to participate in the labour force compared to men.

As expected, variables related to the individuals' mindsets significantly impact on labour supply decisions among Kosovans. Results are in line with their a priori impacts suggesting that individuals that perceive to have decision-making power within the household and have a less traditional mindset are more likely to participate in the labour force. Individuals perceiving that they can significantly influence education spending - indicative of rather symmetric decision-making power among family members - are more likely to participate in the labour force. Further, those perceiving that men's rather than women's employment is more important in the household - indicative of a rather traditional mindset - have a lower probability of labour force participation. Results are the same when performing the estimations by gender, expect for the statistical insignificance for men of the coefficient on the perception that men's rather than women's employment is more important.

Contrary to expectations, no support is found for the key research hypothesis concerning the simultaneous determination of the decisions. The statistical insignificance of the correlation coefficient (rho) between the error terms of the two equations, in both Model 1 (rho=-0.05, $p=0.17$) and Model 2 (and rho=0.2, $p=0.18$), suggests that there is no interdependence between the decision to participate in the labour force on one side and receive remittances and plan to emigrate, respectively. This, in turn, implies that the two equations are independent and that they can be estimated as separate probit equations (Greene, 2012). This empirical evidence, however, has to be taken with caution, for biprobit does not control for the endogeneity in migration plans

²⁵ Empirical results by gender are available from the author upon request.

when it estimates the interdependence between the probability to participate in the labour force and that to receive remittances. Hence, in what follows a more advanced technique, namely multivariate probit, will be introduced which is assumed to overcome the limitations of biprobit.

Multivariate probit

Theoretical arguments on migration and remittances being endogenously determined within labour market outcome models are well established in the literature. The results from the bivariate probit, though, do not provide support of the decisions being interdependent. Biprobit, however, when controlling for the interdependence between the decision to participate in the labour force and that two receive remittances, ignores the interdependence between labour force participation and the decision to plan migration. Given the strong arguments in the literature about the three decisions being endogenously determined, and in an attempt to overcome the shortcomings of biprobit, contrary to the researched reviewed for the purposes of this paper, this analysis deploys multivariate probit (henceforth mvprobit). Accordingly, the biprobit Model 1 is extended by adding the equation on the probability of planning emigration. Table 3 reports the results of the mvprobit.

Table 3. Multivariate Probit Results on the Determinants of Labour Force Participation

Variables	Labour Force Participation		
	Whole Sample	Women	Men
Key variables			
Remittances	-0.149 (0.095)	-0.14 (0.14)	-0.44 (0.18)***
Migrationplan	0.08 (0.11)	-0.012 (0.16)	-0.299 (0.16)**
Jointdecisionedu	0.09 (0.05)**	0.0006 (0.07)	0.26 (0.09)***
Menemployment	-0.13 (0.03)***	-0.18 (0.04)***	-0.07 (0.05)
Gender	0.89 (0.04)***		
Elderly dependents (over 65)	-0.62 (0.10)	-3.65 (92.10)	-0.48 (0.11)***
Individual characteristics			
Household characteristics			
Location-related characteristics			
Constant	-1.92 (0.21)***	-2.98 (0.3)***	-0.91 (0.33)***
Rho21	0.298 (0.076)		
Rho31	0.154 (0.079)**		
Rho 32	0.140 (0.034)***		
Likelihood-ratio test of rho21 = rho31 = rho32 = 0: chi2(1)=	19.59***	19.02***	17.44***
Observations	7,828	4359	3469

Prior to interpreting the mvprobit results and comparing them with those from biprobit, it is important to test whether the three decisions are interdependent which would support the argument of using mvprobit instead of biprobit. In line with theoretical expectations, results from the likelihood-ratio test on the hypothesis that the correlation among the error terms of the three equations is zero ($\rho_{21} = \rho_{31} = \rho_{32} = 0$) indicate that there is interdependence between the three decisions. This evidence renders the use of biprobit inadequate for controlling for endogeneity in the three decisions. Consequently, research questions such as the one in this analysis should be addressed by deploying mvprobit to control for the interdependence among the three decisions (Greene, 2012). This recommendation holds for future research on this topic.

Similar to results from biprobit, support is found for the disincentive effect hypothesis of remittances and the disruptive effect hypothesis of migration. Still, the coefficients on both variables are statistically insignificant for the whole sample. By gender, results from mvprobit are in line with the disincentive effect hypothesis of remittances, but the impact is significant only for men. Contrary to the mixed results from biprobit, here support is found for the disruptive effect of migration plans for both genders; again, the impact is significant only for men.

There are strong similarities between regarding signs, magnitudes and statistical significances of the subjective variables controlling for individuals' mindsets for the whole sample. Support is found for the hypothesis that more traditional individuals are less likely to be in the labour force, whilst the opposite holds for those perceiving that they have a rather symmetric decision-making power distribution within the household. By gender, results between the two techniques are again similar. Kosovan women that have a more traditional attitude are less likely to be in the labour force, whilst Kosovan men that perceive to have a rather equal distribution of decision-making power in the household are more likely to participate in the labour force. Results are similar also with respect to gender differences; again, in Kosova, men have a higher propensity to be in the labour force compared to women.

In sum, there are differences in empirical results between mvprobit and biprobit for the whole sample. Although both provide support for the disincentive effect of remittances for the whole sample, the impact is insignificant in mvprobit. Opposite results are found regarding the impact of migration plans. The variables controlling for social norms have the same signs, yet differences are evident regarding their statistical significances. By gender, results are different both in terms of sign and significance regarding remittances and migration plans. Yet, results between the two techniques are similar with regard to the sign and significance of the variables controlling for social norms.

Decomposing the Gender Gap: Fairlie's (2003) extension of the Blinder-Oaxaca decomposition technique

Following the discussion in Kotorri (2010) about group differences when the outcome variable is binomial, Fairlie's (2003) decomposition technique for non-linear models is used to investigate gender differences in the probability of labour force participation. This technique tests the statistical significance of the overall difference in the probability of labour force participation between women and men. Additionally, it enables identifying and quantifying of individual contributions of explanatory variables to the overall difference and testing of their respective statistical significances.

Results from Fairlie's (2003) decomposition²⁶ are reported in the table below. The overall gender difference in the probability of labour force participation between women and men is 0.30 with women having a lower probability (0.31).

²⁶ Please note that Fairlie's (2003) decomposition technique cannot be performed after mvprobit. Therefore, it has been performed after probit. As such, it does not consider endogeneity, and thus results have to be taken with caution.

Table 4. Results from Fairlie's (2003) Decomposition Technique

<i>Total difference</i>		0.30
<i>Total difference explained</i>		-0.05
<i>Probability of labour force participation Men</i>		0.61
<i>Probability of labour force participation Women</i>		0.31
Variable label	Coefficient	P> t
Remittances	-0.001	0.001***
Migration plan	-0.008	0.001***
Jointdecisionedu	0.004	0.001***
Menemployment	-0.0009	0.16
Eduhigher	0.008	0.001***
Married	-0.003	0.001***
Elderly dependents (over 65)	-0.02	0.001***
Number of observations	7.828	

Analysing the gender gap in labour force participation by individual variables, the decomposition estimates indicate that gender differences in receipt of remittances, migration plans and the perception that men's employment in the household is more important than that of women make statistically significant contributions to the overall gender gap. Both remittances and migration plans reduce the gender gap. This is not unexpected, as both variables, when they are significant, they are found to have negative impacts on men's labour force participation, and positive impacts on women's labour participation. In the case of remittances, this evidence supports the view that remittances relax budget constraint, and thus enabling women to outsource domestic duties and join the labour market. The evidence regarding migration plans suggests that, compared to men, women are more prone to investing in work experience to increase their chances of finding paid employment upon migration. This can also point at perceptions that, compared to men, women are subject to stricter standards and therefore need to invest more in their work experience and work harder for the same type of job. Contrary to theoretical expectations, gender differences in the perception that one can influence decisions on education spending significantly or very much, contribute to the gender gap. This may be due to probit not controlling for endogeneity. Still, this result renders deeper analysis of the impact of social norms in the future. Decomposition results also point to labour market premia regarding higher education favouring men.

Concluding Remarks and Policy Implications

This research has analysed the role of remittances, migration and social norms in women's economic empowerment using a sample of 8,604 Kosovans from the Labour Force and Time Use Survey conducted in 2017. Unlike other studies, it has explicitly controlled for the relevance of social norms. Further, it has deployed Fairlie's (2003) decomposition technique to identify and quantify each variable's contribution to the gender gap, in addition to examining each variable's impact on labour force participation by gender. To overcome the limitations of the biprobit model, it has deployed mvprobit to address the key methodology issue in the literature, namely the endogeneity in remittances and migration in labour force participation models. Empirical results render the use of boprobit inadequate in this context.

Overall, results suggest that for Kosovans the propensity to participate in the labour force is determined by individuals' social norms and customs, rather than migration and remittances. None of the studies reviewed has incorporated such variables. Throughout model specifications,

techniques, and samples, results suggest a positive effect on labour force participation of the variable controlling for whether the individual perceives that s/he can influence the decision on education spending to a great extent or very much, and a negative effect of the variable taking the value one if the individual perceives that it is more important for men in the household to be employed than women. These two variables are statistically significant when using the whole sample. By gender, though, the impact of the first variable is significant only when using the male sample, whilst the second variable is significant only when using the female sample, both in biprobit and mvprobit.

Consistent with results from other studies, findings provide support for the disincentive effect of remittances on labour force participation, although, for the whole sample, the impact is significant only under biprobit Model 2. By gender, the impact is statistically significant only for the male sample, both under biprobit and mvprobit. Mixed results are found for the hypothesis that migration prospects induce individuals to invest in working experience. By gender, evidence indicates that Kosovan women that plan to emigrate are more likely to participate in the labour force (biprobit Model 1), whilst the opposite holds for men (mvprobit).

Results provide support for the gender gap in labour force participation. Kosovan women are less likely to participate in the labour force. Further, living in a household with elderly dependents also reduces the likelihood of labour force participation. Yet, it is intriguing that its impact is negative for both genders, and that it is statistically significant for men under mvprobit. This may suggest, though, that migration plans stem from contractual arrangements within the household, whereby those left behind, men and women alike, agree to take care of the elderly, when a household member emigrates.²⁷

As argued above, most of the studies reviewed raise the theoretical question of potential gender differences in the effect of migration and/or remittances on individuals' labour supply. Empirically, they examine it in a rather limited manner controlling only for the gender of the individual. This analysis attempts to contribute to a better understanding of gender differences by decomposing the gender gap and identifying and quantifying the impact of individual variables to it. Decomposition results indicate that both remittances and migration help reduce the gender gap. Surprisingly, the variable controlling for equal distribution of bargaining power contributes to the gender gap, whereas that controlling for traditional mindset, reduces the gender gap.

In sum, this analysis reveals that social norms and traditional gender roles are strong determinants of labour supply decisions among Kosovans, and that remittances and migration plans disincentives them to participate in the labour market. In this context, awareness raising campaigns on the importance of women's economic empowerment for the socio-economic wellbeing of children, family members, and society at large have to be implemented with both women and men. In a context in which labor demand is very scarce, policy-makers have to acknowledge and seize the opportunity of facilitating the use of remittances for self-employment/entrepreneurial activities. For the purpose of women's empowerment, that is, to reduce the gender gap, such policies need to be tailored to the needs of women. Additionally, potential emigrants should be offered training programmes to enhance their employability abroad. At the same time, these programmes should be used to regulated migration by limiting migration spells, and thus legally forcing return to the home country.

²⁷ See Kotorri (2015) for a detailed discussion on the applicability of the household view in the context of Kosovan migration.

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SUSTAINABLE LEADERSHIP DEVELOPMENT DURING POST-COVID-19 IN SLOVENIA: CASE ILLUSTRATION

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Abstract

Leadership development takes place (more often than in a lecture hall) in natural (work) environments (e.g. departments, companies). What seems like insignificant moments can eventually be important milestones in our leadership development. Therefore, the analysis of moments should be added to leadership development and their role should be paid attention to. Crises or dramatic transitions shape a leader, but by focusing on turbulent events, we can overlook defining moments/events that seem unimportant, but to which we keep coming back (habits shape the routine of our actions as leaders). Most leadership development takes place in natural learning events. It is important to realize that in addition to important life crises and transitions, positive short triggers can also accelerate leadership development through leadership training/workshops. Our purpose is to systematically examine sustainable leadership development and offer a broader insight into sustainable leadership. We will present the implementation of sustainable leadership development based on in-depth theoretical analysis as well as research analysis in the selected company. With the help of modern research methods and practices carried out in the company, we present how important it is that a small company adapts and implies sustainable leadership development in its daily operations. Based on the observation, secondary and primary data we will analyze the qualitative data gained in the researched company. We present the following findings: (1) demonstrate the importance of sustainable leadership; (2) definition of sustainable leadership and show the process of development in the company in question; (3) emphasize the importance of stakeholders; (4) show the changes that have taken place since the start of business up to today; (5) determine if and to what extent the actual presence of sustainable leadership in the selected company; (6) identify additional possibilities through analysis, how to further encourage the growth of sustainable leadership, and which changes or approaches need to be implemented for the development of these activities. Our research draws from insights that begin with pre-set research questions and also from existing theories. Above all, this interweaving of theory and practice can be observed. Based on

independent research, we present a sustainable leadership development process and the adaptation of strategies that lead to sustainable leadership in a small-sized company. Therefore, the concept of sustainable leadership is presented from a practical and research perspective.

Keywords: leadership, sustainable leadership, delegation, crisis, COVID-19

JEL classification: M14

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1. Introduction

Leaders who want to achieve better results in the company add changes and new elements to their processes. So, they pursue and create sustainable leadership. Sustainable leadership does not mean that things only last, but that they are compatible with the field of environmental protection. It means that it expands and lasts, does not exhaust human and financial resources, and avoids negative damage to the surrounding education and the environment in the broader and narrower sense. Hargreaves and Fink (2003) describe the seven principles of sustainable leadership: (1) Sustainable leadership creates and maintains sustainable learning. Endurance means something that is maintained. It is learning that is important, lasts, and involves the individual based on the emotional, social and intellectual domains. The main responsibility of leaders who want to educate their staff in the direction of sustainability is to preserve and renew learning. (2) Sustainable leadership ensures success over time. Sustainable improvements in a company are not just fleeting changes. In the case of correct implementation of new changes in the company, this means long-term performance and results. Leadership in this direction does not mean only charismatic leadership but spreads through individuals in the entire chain of the company, who are connected by the actions of the leaders. (3) Sustainable leadership preserves the leadership of others. One of the ways that the leadership thinks in the direction of sustainability continues is to share knowledge with others. It starts with a leader who spreads his knowledge to others. (4) Sustainable leadership addresses issues of social justice. Sustainable leadership is an interconnected process that also concerns the social aspect. It's not just about improvements in the company, but a responsibility that is affected by actions in the wider environment, so it's about social justice. (5) Sustainable leadership develops and does not exhaust human and material resources. Sustainable leadership provides various rewards within the company and incentives that also come from outside the company. In doing so, they attract and retain leadership and other people. (6) Sustainable leadership develops environmental diversity and capacity. All leaders who are advocates of sustainability are constantly encouraging and improving in a wider area. They also allow others to progress and learn from different practices. (7) Sustainable leadership actively deals with the environment. It means working and having a positive impact on the environment. Dealing with the environment inside and outside the company, and thereby gaining achievements in the long term.

The aim of our paper is to present how a sustainable leader is different from other established leadership styles, already in terms of competencies. In the first part of our paper, we present key characteristics of sustainable leadership, and its development and then highlight its key characteristics, together with one of the most known and researched models, the sustainable leadership pyramid. In the second part, we provide an empirical illustration of sustainable leadership development in Slovene company Mizarstvo Kržišnik, based on observation, interview, and secondary data.

2. Theoretical Overview

Kovacevic and Rahimic (2018) indicate that gender differences exist in Machiavellian leadership styles. The results of their study implied men score higher on Mach scales and rather prefer Machiavellian/manipulative leadership practices contrary to women.

Leadership development takes place (more often than in a lecture hall) in natural (work) environments (e.g. departments) and not at lectures or workshops (however, short development interventions of exercises and reflections can also be important; Avolio, 2011, p. 207). What seems like insignificant moments can eventually be important milestones in our leadership development (Avolio, 2011, p. 207). The interaction/conversation/lecture of a trusted colleague/expert can influence our leadership development for many years to come. Therefore, the analysis of moments should be added to leadership development and their role should be paid attention to. Crises or dramatic transitions shape a leader, but by focusing on turbulent events, we can overlook defining moments/events that seem unimportant, but to which we keep coming back (habits shape the routine of our actions as leaders; Avolio, 2011, p. 208). Most leadership development takes place in natural learning events. It is important to realize that in addition to important life crises and transitions, positive short triggers can also accelerate leadership development through leadership training/workshops (Avolio, 2011, p. 216).

However, we must not neglect the development of the leader already in the early development phase itself, or from the youth period. This is how we achieve a complete understanding, from the beginning to the final development of certain skills. The most important personality trait for leadership is creativity, which we develop from an early age. The basic function of leadership is to correctly direct and connect relationships in the company. Three factors are important in the development of a leader (Kržišnik, 2022): (1) It is most common that leaders come from a professional field and do not yet have developed leadership skills. This means that they are actually qualified in their field of expertise. First of all, they need to know what leadership is, because when they find themselves in the position of a leader, it is crucial that they know what their tasks are. The role of the leader is fundamentally different from all the roles played by other stakeholders in the company. (2) Only a few people are systematically foreseen and competently developed for leaders. We learn communication skills already in the family and use them constantly at every step. However, only a few people have the privilege of growing up in families or working in organizations where they have acquired a reference for communication that is suitable for the complex organizational world. (3) Here, however, we refer to the general dimension. This can be interpreted as accepting responsibility. In case of irregularities, those from the neighboring department who did not react in time, or a colleague who did not complete the task, are usually to blame. Here the task arises that people must be aware of their own power and act themselves so that the problems do not arise again. When we combine all three described factors, we achieve success. A person who is responsible for his actions and takes care of them, who is aware of his own strength and knows his role, and has certain knowledge, this person is successful (Bavec, 2019).

Sustainable leadership development is based on experience, which promotes cooperation and long-term values, which we perceive as the new capital, namely symbiotic capital. It is the capital that shows the progress of human and social capital as a whole, and it is related to natural capital. Leaders who are oriented toward sustainability take these two factors into account and connect them with the natural environment (Petriglieri, 2012). Of course, in addition to these two factors, leaders must be aware that business transformation begins with a great deal of enthusiasm and readiness for change. These are changes in not all areas of the company. Gradually, the culture, company, employees, management, processes, and all other stakeholders begin to change. When the leader is aware of the importance of the process and consciously follows it, resistance and

frustration will not appear. The process is extremely demanding and can be carried out professionally and responsibly. Here, however, the level of maturity and persistence of the leader in the introduction process is shown. The manager and the company have to embark on the path of sustainable transformation themselves. The problem is that sustainability is still understood as an additional cost, not a business opportunity. However, those leaders who are aware of the importance of sustainability can already see the exceptional financial performance (Volfand, 2018).

The sustainable development of leadership is also connected with individual leadership development, activation learning, 360-degree leadership, a mentoring system, workshops, and education, especially for managers, training, education, and coaching, which means that the individual is in constant contact with his mentor (Peterlin et al., 2012 in Kržišnik, 2022).

The growing influence of sustainability today naturally affects the development of sustainable leadership. The answer to why sustainable leadership is important, and how it developed into an increasingly important factor, can already be drawn from the crisis that appeared in 2008. It was caused by major changes in the financial markets, which later also appeared in politics and led to a social crisis. The main question arises with stakeholders or leaders. Why did they fail to control the situation and prevent the crisis that arose? The answers can be found in the disregard for nature, the economy, the interdependence of society, and the sustainable development of society. This is precisely why the development of sustainable leadership is so important today so that we do not come back to the crisis and intractable situations that have already arisen in the past (Vilman, 2016).

The Institute of Sustainability Leadership (2011 in Kržišnik, 2022) found that leaders today are adopting new ways of looking at the world. Thinking and interaction lead to innovative sustainable solutions. The leader must motivate and encourage his employees in the direction of sustainability, or action in the direction of a better world in the present or future. One of the key organizational goals and elements of business practices is motivating and influencing employees. In order to create a sustainable organization, the key leadership point of view is to move from usual business practices to environmental ones (Latiffi and Zulkiffli, 2016). Sustainable leadership is assuming responsibility toward individuals, groups, and organizations by evaluating the principles of sustainability (Kržišnik, 2022).

Mindfulness in leadership focuses primarily on where the leader uses his attention. It is a more systematic method that helps to understand and transform thoughts, not only for the leader, this method is good for other stakeholders as well. Such a change affects the leader, namely his observations of the world, and his performance. It is for this reason that we can emphasize that mindfulness can be included in everyday situations (Hunter & Chaskalson, 2011). Meanwhile, others see and perceive mindfulness as thinking. A leader from this point of view is a person who uses rational cognitive processes to solve various crisis situations and problems that may arise. Attention, which is mentioned as a cognitive skill, together with openness is believed to create the foundations for mindfulness (Seiling & Hinrich, 2005).

Even with small changes in the workplace, employees can be more present, focused, and attentive. Mindfulness can be done at any time during working hours. Our minds are most creative in the morning, so that's when it's time for conversations, phone calls, e-mails, and other commitments. Slowing down occasionally at work can lead to better productivity, endurance, efficiency, and therefore better performance of your work. The individual should do routine matters differently. He should take a different seat in meetings, he should answer e-mails in another part of the day, he should take a break if necessary. Small things can lead to a much better feeling in the workplace (Lenarčič, 2021).

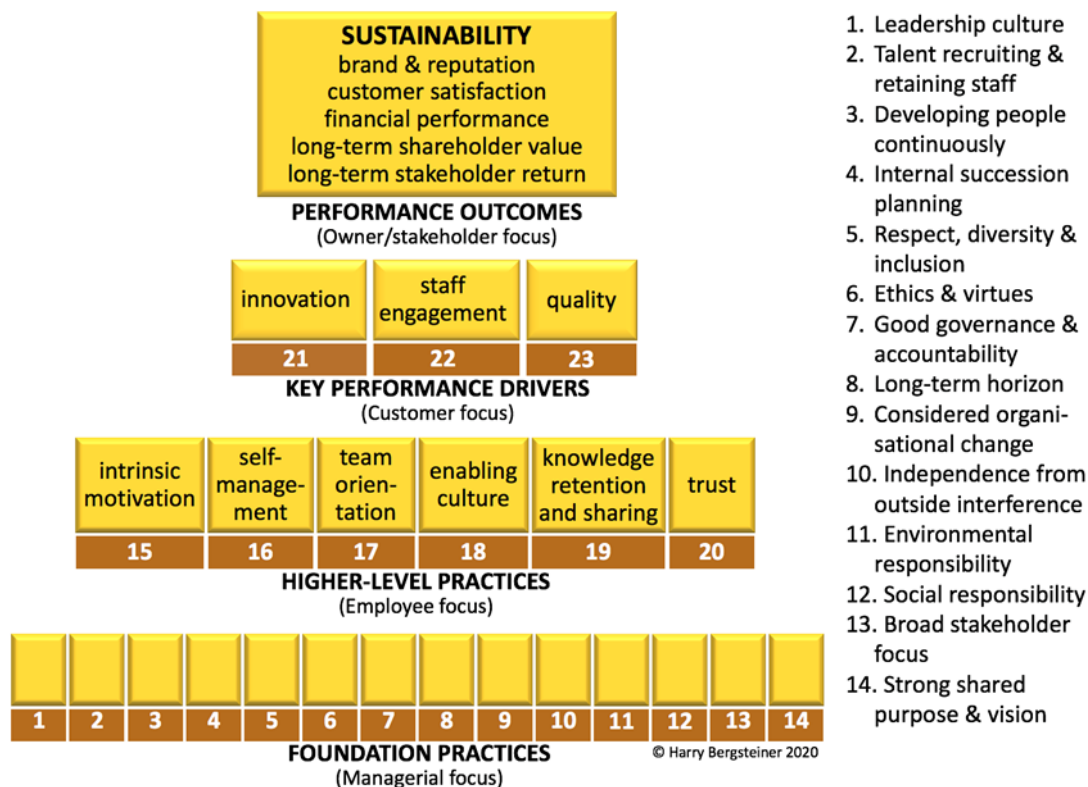
It is also necessary to pay attention to what is happening in the workplace. There are various exercises with which colleagues can show concern for others in the company. For example, with a

shorter question. The first question may touch on unpleasant emotions, e.g. I notice that you are not in the best mood today, what is wrong? Another question may touch on positive feelings, e.g. What makes you happy? This shows compassion for others, the skill of listening, and awareness of oneself and others (Engelhart & Engelhart, 2014).

3. Sustainable Leadership Model

Table 1 presents the theory of sustainable leadership where professor Avery and professor Bergsteiner present 23 practices of sustainable leadership which are structured at different levels and demand a different kind of attention in each individual organization. It is recommended that the leader chooses a few practices (fundamental) that they wish to improve and then slowly advance with changing the rest of the practices if needed (Avery & Bergsteiner, 2011 a, b, c; Avery & Hughes, 2013).

Table 1. The Sustainable Leadership Pyramid



1. Leadership culture
2. Talent recruiting & retaining staff
3. Developing people continuously
4. Internal succession planning
5. Respect, diversity & inclusion
6. Ethics & virtues
7. Good governance & accountability
8. Long-term horizon
9. Considered organisational change
10. Independence from outside interference
11. Environmental responsibility
12. Social responsibility
13. Broad stakeholder focus
14. Strong shared purpose & vision

Source. Bergsteiner, 2022.

Sustainable leader’s competencies (Kržišnik, 2022) consist of knowledge, skills, and attitudes (Hartle, 1995 in Kržišnik, 2022). A sustainable leader can fulfill certain competencies and implement them based on practice. We talk about leading teams, developing people, making decisions, and achieving results. A new interpretation of these competencies is also required, which requires additional skills.

Most competencies can be divided into three areas (Kržišnik, 2022): 1) A permanent mindset shifts from “me” to “we”; 2) systems thinking and 3) building relationships. Leaders have a strong gut feeling combined with a long-term future orientation. This feeling, which is becoming stronger and stronger, passes into the mission of the organization. It is also an innate motivation with which we can move to greater productivity or a triple effect. This, however, focuses on social, environmental, and financial performance, or "people, planet, profit". The specific

competencies that are included in sustainable leadership include a) *Enlightened self-interest*: seeing stakeholders not only in the narrow but in the broadest sense, including future generations; b) *Long-term orientation*: an awareness that there is no long-term success without short-term success, therefore focusing on long-term goals. However, this should not lead to the deterrence of pressure from customers with different competing goals; c) *Presentations*: achieving your highest future potential through a combination of perception and presence. Motivating and inspiring others and collaborating in finding and setting a vision. Integrating observation, quiet reflection, responding to feedback, and then taking action where necessary. Grouping according to the principle of "Doing what you love and also loving what you do"; d) *Courage*: being driven to overcome resistance and maintain momentum to achieve the desired goal. It is also necessary to make decisions in a chaotic environment, namely without obstacles due to overload or lack of certain information.; e) *Integrity*: stakeholders must see sustainable leaders as their role models. Therefore, it is necessary to demonstrate honesty and moral values in personal and professional life; f) *Openness*: showing interest in new ideas and beliefs of other stakeholders; g) *Transparency*: it is necessary to provide clear information, which can be positive or critical. In this way, the leader can reinforce the best behavior and also limit the worst behavior of individuals (Kržišnik, 2022).

Sustainable leaders are and must be adept at systems thinking. There are larger contexts outside the immediate focus of the organization, and they need to be aware of that. But they have intellectual flexibility, and the ability to analyze the details of the strategy and they can monitor aspects where necessary. At the same time, they encourage all interested parties and in this way form a vision and can decide between competing interests, which are: a) *Seeing the bigger picture*: Designing a favorable future for your organization, while recognizing that there are wider and more complex systems outside the organization. However, it is also necessary to understand the competing demands of different groups of stakeholders; b) *Appreciate the details*: the successful implementation of the strategy depends on the correct details or the resulting awareness of the leader. Willing to zoom in when necessary to get to the root cause of the problem. Just as quickly, zooming out can also happen, so that we once again move into the perspective of the big picture; c) *Maintaining balanced decision-making*: global and local perspectives must be taken into account, thereby gaining support for well-founded decisions; d) *Keeping it simple*: a good understanding of the product manufacturing process, operations, the entire organization and stakeholders, and processes. Development of products or services that serve our customers, while at the same time we can explain them in an easy way to all major stakeholders.

Understanding and accepting people from different cultures with different thinking and building long-term relationships are vital for sustainable leaders. On the basis of good relations, productive and positive relations with key stakeholders are developed, which lead to concrete and effective results: a) *Understanding the diversity of cultures*: improving knowledge, acquiring the ability to recognize and respond to people, organizations, and other stakeholders; b) *Embracing diversity*: eliminating unfair treatment and maximizing the potential benefits to stakeholders of a diverse organization; c) *Networking*: when permanent business opportunities arise and building new relationships with stakeholders, quick and correct recognition and action is required; d) *Facilitating meaningful dialogue*: sharpen the ability to listen, make decisions on a collective basis and demonstrate the ability to promote the sustainable language. To be reliable, flexible, and cooperative and in this way to combine skills for conflict management, mediating between different interests of stakeholders and their coordination and promotion with the desired strategic direction; e) *Empowerment*: giving stakeholders autonomy, which enables them to solve problems in completely new ways. It is also necessary to provide an adequate incentive for cooperation in work, and thus the pursuit of a sustainable goal; f) *Measurement and review of improvements*:

setting analytical and reflective skills with which we can measure improvements in several areas and observe where there is an excess of the final result. This measurement also affects the decisions of the stakeholders, or the relationships between them, the final results, and responsibilities and benefits (De Haan, Jansen & Ligthart, 2016).

In all organizations, leaders must be able to lead the organization in the right direction. Along the way, they encounter various challenges, which enable them to turn them into valuable opportunities. Sustainable leaders are those who can quickly adapt to the wider and narrower environment. With their principles, they attract, inspire and retain employees and are immensely rewarded in this way (Carter, 2019).

4. Methodology

The purpose of the study was to research, how sustainable leadership is developed and reflected in companies. The study was carried out because of research in a family business. It was precisely for the sake of researching the family business that it was necessary to exclude subjective thinking and focus on objective information acquisition.

The research work first begins with the concept of sustainable leadership. It is necessary to gain a broader view of this concept, and research how it developed in the past and how is treated today. The work begins with the consideration of existing concepts, and in this way, the concept can actually be introduced and implemented in business practice as well. It can be observed that the concept of sustainable leadership with a certain adaptation of strategies is interwoven into business practice itself.

Each research also has its own methodological approaches, which manifest themselves as scientific findings. In this way, experts can arrive at their final research. The main goal of qualitative research is to gain reliable insights from the field being researched (Vogrinec, 2008).

All data were obtained on the basis of available domestic and foreign literature in this field. The data were obtained by the method of critical literature review, from existing domestic and foreign scientific sources. A lot of research and articles can be traced by various secondary data, and a huge amount of data can be found from a rich treasury of online sources for example Institute for Sustainable Leadership, ProQuest, and ScienceDirect. The study research is also reinforced based on Slovenian and foreign books and other collections. Of course, we cannot ignore the fact that theoretical knowledge is always connected to practical implementation. In the selected company, it was possible to conduct a non-structured interview with the company manager. Based on this data, we can only deepen and develop the research further. The research is carried out on the basis of the individual or the head of the company, which is one of the keys to the existence and development of sustainable development. By obtaining this data and viewing the company itself, it is then possible to formulate various analyzes and conclusions.

The research of the company itself was carried out in certain steps, the first was a critical review of the literature, an analysis of domestic and foreign literature, a non-structured interview, research of the presence of sustainable development in the company, an analysis of the obtained data and findings and proposals for further business.

5. Findings

From the very beginning, the company operated in smaller premises, including material suppliers, and energy providers, and the concept of the business itself was completely different if we compare it to today. They did not bother with energy consumption, because at that time energy was more affordable than it is today. They looked at all energy sources mainly from the point of

view of the cost that needs to be paid. They were even less concerned with the idea that it is necessary to think sustainably and take care of the environment.

Over the years, the company began to expand and became much larger, energy consumption increased, more and more people began to talk about the impact on the environment and the mentality changed. The beginning of mentality in the company started with the director himself. Involvement is important in the company, as it is the main factor in employees changing their minds and creating a strategy. The energy efficiency strategy is important for the mission and competitiveness in the market. Due to the increased volume of production and the purchase of new machines, key questions were also raised. What are the energy prices on the market? Does it make sense to lease electricity, given the current price? Where is the most and least energy consumed in the company? How can we reduce it and thereby lower operating costs? All these questions lead to answers that are crucial.

The key is that the company has prepared for all the sustainability factors and trends that we can see today. Finding more affordable materials and products is great for keeping costs down. At the same time, the search for new materials will be more environmentally friendly, and consequently also the awareness of others. Sometimes, however, it is necessary to invest in a company and take it to another level. All the investments listed in the table below were made to facilitate work in the company. Investments were made in the company to make work easier for the workers, and in new premises that are more sustainable and economical.

Table 1. Investments Over the Years

Year and date	Name of the fixed asset	Investment in EUR
05. 04. 1989	Business premises	26.325,30
12. 12. 1990	Central stove, lights and stove	11.009,93
03. 09. 2013	Carpentry workshop	85.747,14
28. 05. 2015	CNC machining center format 4	93.000,00
31. 08. 2018	Briquetting machine 70N	8.524,59
05.02.2021	Computer Lenovo ideacentre 510-I5ICB	590,16

Source: Kržišnik, (2022)

Even the goals, which are divided into long-term and short-term, are intertwined with sustainable thinking. (1) To reduce waste in the next search for an alternative. (2) To develop a product in the direction of sustainability (doors made of waste material) means acquiring new materials, and developing new ideas and other opinions. Reviewing the competition and others already developing such products. (3) Sourcing and finding new major projects for future work. As the company leader says, “Thinking about sustainability has completely changed compared to the company's early beginnings. However, considering all the trends and more and more talk in this direction, we tried to move in this direction ourselves. However, I should emphasize that these movements did not happen because of different directives, but we think it is important to do good for the environment. That is why we try to cooperate with young architects, connect with new suppliers, and research new trends in connection with sustainability in other markets. Our vision also strives to become the best sustainable company in the field of fire doors in the future. With this, of course, we want to achieve the highest quality of our products and innovations on the market, and offer our customers customized marketing solutions.” (Kržišnik, 2022)

6. Discussion

Mizarstvo Kržišnik is a family business, and the business dates back to 1972, when the leader or founder of the company, Stanislav Kržišnik, got the motivation to start his own company. He never had any idea that the company would become so successful today. Also, the tradition of running a family business will continue into the future. The business started on small premises and in a completely different direction than the company operates today.

The company manufactures fire doors and is the only company in Slovenia that has achieved the 60-minute fire test in Slovenia. The company is currently managed by Slavko Kržišnik. From 2023 the company will be managed by his son Damijan Kržišnik. The company actively follows trends in the development of new products, and constantly adjusts its business strategy.

The company is also increasingly aware of the importance of a sustainable approach, which benefits not only itself but also other stakeholders involved in the work process. It is important that sustainable development means the needs of both future and current generations, and at the same time, it also means the existence of these generations in the future.

6.1 Energy Saving

Energy saving is one of the key criteria when monitoring how a company is doing business successfully (Bureau Veritas, 2022). We found that the first item of every company when mentioning energy efficiency is saving money. Now companies are more and more oriented towards the direction: “let us do well for the company and the environment itself”. Energy efficiency can be difficult, but for businesses that take it seriously, it can lead to many benefits. In addition to helping the planet, it also improves the company’s reputation, improves productivity, and protects the company from volatile energy markets.

Energy is used to hide deep within procurement costs. Currently, it is an important resource in all companies and has gained a place as a key lever of business success (Winston, Favaloro & Healy, 2017).

In the company, they are using different types of energy and they are increasingly thinking about how they can help the company itself as well as the environment in an economical way. Wood is used for space heating, as waste wood materials are also produced in production. When sawing different types of wood, sawdust is produced, which is also waste material. By investing in a machine called a briquetting machine, all waste sawdust is processed into briquettes.

Briquettes are an energy source that burns for 4 hours or more. They give a lot of energy and little ash and exceed the energy potential of firewood. They are environmentally friendly and produce less smoke (SI.top, 2022).

All workspaces, as well as office spaces, were newly constructed. Various experts, as well as the employees themselves, were involved in the process of building new premises. Spaces are bright and warm, as there is as much as 80% natural light in the spaces. The spaces are painted in bright colors; the lamps are installed with the help of experts and are energy-saving. There is no need to heat or cool the premises in the summer. There is a huge door in the workshop that they simply open in the summer to ventilate the space. The workshop is built in a certain position relative to the sun for different seasons. Next, it is a large garden where everyone who works in the company can rest in the sun or hide in the shade where the trees are planted. The director always thinks in a sustainable direction, not only in the company but also outside it.

6.2 Safety, Water Use, and Waste

At the company Mizarstvo Kržišnik, everyone has completed occupational health and safety. In this way, they can avoid unpleasant situations that may occur in the workplace. The employer is obliged to provide training for safe and healthy work when entering into an employment relationship, being assigned to another workplace, introducing new technology, and when changing the work process that may result in a change in safety at work (Slovenian business point, 2021).

In the company, the work is adapted to the individual and his abilities as well as his wishes. Based on the introduction of new technology or information about changes, various training courses are held. Correct communication, where instructions are clearly given, is therefore crucial. Given the specifics of the work, it is necessary to ensure that the workers are not overloaded, so the manager invests in the future, or provides machines with ever-increasing relief for the worker. The company, they are also investing in machines that increase productivity and ensure greater safety at work.

Water covers 70% of our planet, so it is easy to think that it will always be abundant. The water we drink is sweet, and there are only 3% of these in the world (World Wildlife Fund, 2022).

In the next 50 years, scientists are expecting that the biggest environmental problem would be water scarcity (Spors, 2011).

In the company, the deals are exclusive with the wood so water is practically not used in the production of a product. In addition, there are all aware that there is a shortage of drinking water, so they develop a responsible attitude and also save water in different ways. By reducing the consumption of drinking water, the consumption of electricity also indirectly decreases, thereby contributing to the preservation of the environment. In each company, water consumption is different depending on the activity they perform. Mizarstvo Kržišnik has a low flow of drinking water consumption. This means that all taps (kitchen, toilets, and work areas) are equipped with low water flow. They are also using special rainwater collectors, which then flush the toilets.

Let us touch on the topic of waste, which is generated a bit more in the company. Depending on the specifics of the work, hazardous waste is also generated. The varnish that the company buys for painting the doors is usually used up. If the varnish remains, it must be properly stored and placed among the special hazardous waste. Even during the varnishing process itself, the worker is dressed in special clothes and must wear a mask and goggles for protection. To the customers is always offered the other types of varnishes that are more environmentally friendly. For example, they can take water-based varnishes, oil-based primers, or water-based paints, which are much more environmentally friendly. At the very beginning of the business, the company always wrapped all the doors with plastic wrap when they were finished. This process created a lot of unnecessary waste. Today, however, all products are wrapped in cardboard boxes, which can be used for a long time.

6.3 Care for the Environment

We are increasingly facing the fact that we do not take enough care of the environment. People's awareness must take place both for individuals, groups, and companies. It is very important that companies make an effort and invest their energy in preserving the environment in all areas. The basic thinking in the company is to focus on customers, on the proper professional advice, and care for the environment, employees, and others involved in this process. They focus on ecological innovations and research, materials, and educational associations and they cooperate with local people. In the future, they will try to make doors from waste materials. In this way, they present innovation, knowledge, new trends, and care for the environment.

6.4 Cooperation with the Local Population

The local population is not just the people who live in a certain area (Pek Drapal, Drevenšek & Drapal, 2004, pp. 22). In companies, it is necessary to establish contacts with the local population, because they are intertwined with their operation. Some companies are more involved with their process, others less so. Maintaining good relations is also important with the local population located in the same geographical area (Pek Drapal, Drevenšek & Drapal, 2004).



Source: Pek Drapal, Drevenšek & Drapal (2004).

The picture shows that the company cannot operate alone, but is connected to many other stakeholders. Today, we can no longer talk about separate systems, as it is an intertwining of the needs and interests of both the company and the local community. Connections take place in different ways and in different directions. That is why proper communication is needed, which connects all stakeholders with each other (Kuntarič, 2016).

The company donates to sports projects in which they themselves participate. Donations are made for cultural events, the volunteer fire brigade, entertainment events, kindergartens, and schools. They also proudly organize an open day once a year and thus cooperate with the Chamber of Craftsmen in Škofja Loka. They also take part in voluntary activities that take place (festivals, cleaning up the environment, and developing a relationship with nature). Of course, they also cooperate with the locals, buying wood, paints, and varnishes from local or nearby partners.

Where the company operates, the belief that the company is only exploiting natural resources must never be established. Rather, the company brings solutions, a better quality of life, economic contribution, and development of the local environment and economy (Reimann, Ehrgott, Kaufmann & Carter, 2012). A company can make a huge contribution to the local environment. It has a positive impact already by offering employment, helping others, participating in projects, offering one's knowledge (Porter & Kramer, 2006).

6.5 Promotion and Retention of Employees

The success of the company depends on the people employed in the company. Unmotivated employees pose a great threat to the company. Therefore, work promotion and proper motivation in the workplace are very important today. The motivation to encourage work must also take place at a sustainable level. The company's employees are influenced by the leader, who acts as a role model and inspires. He describes a future where sustainability is interpreted as an activity of high importance. He attaches great importance to optimism and the acceptance of new ideas in the

field of sustainability. These shape the individual and strengthen the ability of employees to solve environmental problems.

Various research has also been conducted that link sustainable thinking and motivation. Among 251 randomly selected manufacturing employees, it was found that those who knew that managers and directors were also involved in the process of changing the environment were more productive (Graves & Sarkis, 2018).

We all encounter a fast pace of life that sometimes we can no longer keep up with. Both men and women have to balance their private lives with work. The higher a person's education, the more involved he/she is in assuming a more demanding leadership position.

Flexible working hours have recently gained a lot of attention from many companies. Researchers argue that flexible work practices facilitate work-life balance (Shagvaliyeva & Yazdanifard, 2014).

The company practices an 8-hour working day, but in case of an earlier departure or other needs they can leave before, everything is agreed upon with the director of the company. The worker is never required to stay at the workplace longer than 8 hours because they want the workers to feel good and be satisfied. They adhere to horizontal promotion, where an individual obtains a higher salary in the same position. The leader also acquires new tasks that are more demanding or performs work on other machines that require other skills. He often performs his task independently or performs several tasks at the same time. Thus, he acquires greater responsibility and more and more experience in his field of expertise. He can delve into larger projects and express his ideas or thoughts. Unfortunately, it is very difficult to find new staff in the company. They offer different forms of work - from permanent employment, to work through a student or through a contract. In today's conditions, where it is difficult to recruit new staff, they offer permanent employment. The opportunity is also given to all those who are not educated in this direction but show a lot of will and energy to work.

7. Conclusion

Every company adheres to its principles and rules of management if they want to achieve a competitive advantage in the market. Some ideas and innovations are more important than others for the future this is what needs to be accepted.

We can also notice the concept of "sustainability", which is not the first time we have heard it. This concept is more and more common in everyday life. It is very broad to understand, but some still do not define it correctly today. Sustainable leadership and thinking must be brought from understanding to actual implementation in companies.

A big problem for the company is recruiting new staff, as they have been struggling with this for several years. The company would definitely develop much more and faster, work on bigger projects, move to foreign markets, and expand its premises.

The most waste we can find in the paint shop, where the toxic varnish is used. Greater awareness of people and the discovery of new alternatives would be necessary. In the event that the varnishes they order remain, it would be wise to return them back to the supplier. In this way, he could take care of the correct sorting of waste or the reuse of varnish.

The company is creating new products in the direction of sustainability. We are talking about a sustainable door that would be made from waste material. The company should delve even deeper into foreign markets, their materials, and the strategies they use. However, a problem arises with our suppliers, who are still more and more in favor of the "buy cheaper, sell more expensive" mentality and, in this way, do not focus so much on the environment. Still, the company encourages them, and we try to cooperate with other suppliers who know other materials from the field of sustainability.

A proposal to improve business operations and introduce sustainability is also greater encouragement of employees. More training should be provided, not only on occupational safety and learning new skills in the workplace. It should be organized more training in the direction of sustainability. In this way, new ideas would be born in the direction of product development and the search for new materials or new auxiliary suppliers who are more skilled in terms of sustainability. This applies to all companies that are trying to be sustainable.

The leader in the chosen company is the one who started his story. He invested all his knowledge, efforts, free time, and will into the growth and development of the company. There have been many difficulties in the past and the development of the company itself. Only a true leader stays positive and gives positive energy to others. Most family businesses are created with a lot of effort, investment, and effort. Thus, even the leaders or founders of the company are aware of this and make much more effort to ensure that the company will continue to operate in the future. An emotional connection to the company is created, which is why the leader here has even greater motivation and a major role in the company's further growth.

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FACTORS AFFECTING THE ADOPTION OF AUGMENTED REALITY TECHNOLOGIES IN THE SERVICE INDUSTRY

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The high-tech industry, during the last decades, has gone through revolutionary changes that significantly contribute to the rapid prosperity of technological innovations in various spheres of human daily life. This trend fundamentally transformed both the corporate and living environment, the popularization of which was drastically influenced by the COVID-19 pandemic. The expansion and integration of various technological tools, among which Augmented Reality Technologies (AR) stand out as the most attractive, has become a key impicator of strategic transformations in many industrial, health, financial, and other service industries.

Augmented reality is a technological system that transmits computer-generated information into a real, real-world environment in the present moment. It is a technological tool that presents information from the digital environment in the form of animations, images, text, and other multimedia, visual elements on real objects in the real environment. In this way, a high-quality, interactive user experience is distributed, providing significant benefits both for consumers and users of services, as well as for employees, manufacturers and corporations.

Accordingly, this scientific research work aims to examine and establish how employees perceive, and in what way they would potentially accept and adopt the application of Augmented Reality Technologies in the domain of their work and business activities. The starting basis for research and analysis of this issue is the TAM model of technology acceptance from 1989, which will be more complex and thoroughly presented in the continuation of the work. Also, a critical review of academic and professional literature in this field will be presented.

It is believed that the complete digitization process, with the application of new technological achievements, will be revolutionary for almost every area of life and work, encouraging the emergence of new digital products and services through Virtual and Augmented Reality Technologies. In this regard, new and creative methods of work will stimulate the prosperity and quality of man. This scientific research study provides an inspiring and quality basis for identifying and managing the upcoming challenges and trends in this area.

Keywords: Technology , Augmented Reality , TAM model, acceptance

TOWARDS LEGAL CERTAINTY IN THE EU: DIRECTIVE ON CORPORATE SUSTAINABILITY DUE DILIGENCE

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Abstract

Businesses play a key role in creating a sustainable economy and society. European companies are global leaders in sustainability performance. Sustainability is anchored in company's values reflecting a strong commitment to adhere to social, economic and environmental imperatives in line with sustainable development paradigm. In such a state of affairs, why does the European Union need to foster sustainable corporate behaviour and responsible corporate governance? Corporate governance frameworks in Europe vary significantly between Member States. EU action alone seems to have the necessary prowess needed to achieve a higher level of corporate responsibility for long-term sustainable value creation and to set a minimum common ground for dealing with sustainability while avoiding market distortions. On 23 February 2022, the Commission adopted a proposal for a Directive on corporate sustainability due diligence. This paper aims to explore the Directive's far reaching implications on companies business conduct and performance, and in particular the ways of their transposition in national laws. For businesses these new rules will bring legal certainty and a level playing fields, and for consumers and investors they will provide more transparency. This seems important amid - the aim of this Directive - to foster sustainable and responsible corporate behaviour and to anchor human rights and environmental considerations in companies' operations and corporate governance. The proposed new rules will ensure that businesses address adverse impacts of their actions, including in their value chains inside and outside Europe (COM/2022/71 final), in line with the European Green Deal (COM/2019/640 final) and in delivering on the UN Sustainable Development Goals.

Keywords: corporate sustainability due diligence, responsible corporate behaviour, better regulation

JEL classification: K20

FINANCIAL INTEGRATION OF NORTH MACEDONIA AND ADJUSTMENTS OF FINANCIAL REPORTS TO THE VALUE OF EUROPEAN UNION

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Abstract

The financial integration process is one of the main objectives of every country that have their objectives to be part of the European Union. The concept of financial integration is phenomenon in which financial markets, regional or global economies are closely linked with same legislative and same financial instruments. Financial integration includes information accounting system sharing among financial institutions form the same financial system, sharing best experiences form the financial model, same technologies, same financial instruments, companies borrowing funds directly from financial institutions and investing same financial markets, same time investors invest their capital in same international financial markets. The financial integration concept is essential point of the integration in European Union, for all members and applicant members which are part of the process of political integration. In this research paper, we have the objective to show the financial reports between financial alternations and recent process, which based along the capital movements into members of European Union and applicant members. In this study , I have focused in two elements which are related to financial integration factors, first one is their financial market standards have effect financial adjustment process and the second the financial risk-share and financial politics that effect in process of integration. So, based in that the process of financial integration shown us a process that aims to correspond national debt limit between member of European Union , it also present a process where the money transactions are also moving among banks on another level of members candidate to be part of European Union.

Keywords – European Union, financial market, integration

HOW TO MAKE PREVENTIVE RESTRUCTURING FRAMEWORKS WORK? – WILL NEW DIRECTIVE (EU) 2019/1023 IMPROVE THE EFFICIENCY OF INSOLVENCY PROCEDURES?

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Abstract

Traditionally, insolvency procedures in Europe were administrative, with a very strong formal role for the courts and court-appointed administrators. To improve the efficiency of insolvency procedures and increase the recovered value of companies, the European Commission adopted a new directive on restructuring and insolvency (Directive (EU) 2019/1023), which requires member countries to establish and adopt appropriate preventive restructuring frameworks in their national legislation. These frameworks are designed to enable debtors to restructure effectively at an early stage, avoid insolvency and limit the unnecessary liquidation of viable businesses. We present important characteristics and the purpose of the new European legislation. Furthermore, we draw conclusions on the changes in insolvency procedures in Slovenia between the early 2000s and today and their impact on efficiency. The main observation is that there has been a significant change during this period, and we try to explain it based on theoretical evidence and empirical analysis. Additionally, as Slovenia is trailing behind in implementing the Directive (EU) 2019/1023 into national law, we provide guidance for the introduction of efficient preventive restructuring measures for distressed companies in Slovenian insolvency law.

Keywords: insolvency procedures, preventive restructuring frameworks, legislation, Slovenia
JEL classification: E69, G28, G32, G33, G34, G38, H12, K22

ANALYSIS OF THE LABOR AND EMPLOYMENT TRENDS IN RURAL AREAS OF THE REPUBLIC OF SERBIA IN THE PERIOD 2015-2020

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Abstract

Employment trends may vary at the regional, sub-regional (and other) levels, depending on various demographic, economic, geographic and other factors. Therefore, the differences in the employment and labor trends in the rural areas of the Republic of Serbia (compared to the same trends in the urban areas), for the relevant period 2015-2020, are going to be analyzed in the following paper. The differences observed in these regions clearly show the diametric differences between urban and rural regions, whereby it is important to note that greater opportunities are offered to residents of urban areas. Such opportunities continue to attract the population of rural areas, so that rural areas lose on their population, opportunities for (further) development, ability to attract funds for such development and, therefore, face further problems that will continue to multiply cumulatively. The paper presents relevant statistical data, whereas trends in population's behavior can be noticed and expected, especially when it comes to employment and related topics (migration, education, overall quality of life, etc.). Such information can be of importance when creating various development strategies, but also in order to improve the quality of life at the state, regional or local level, while providing more opportunities in the field of labor.

Keywords: Labor and employment, Agriculture, Urban areas, Rural areas, Republic of Serbia

JEL classification: Q000 / R230

1. Introduction

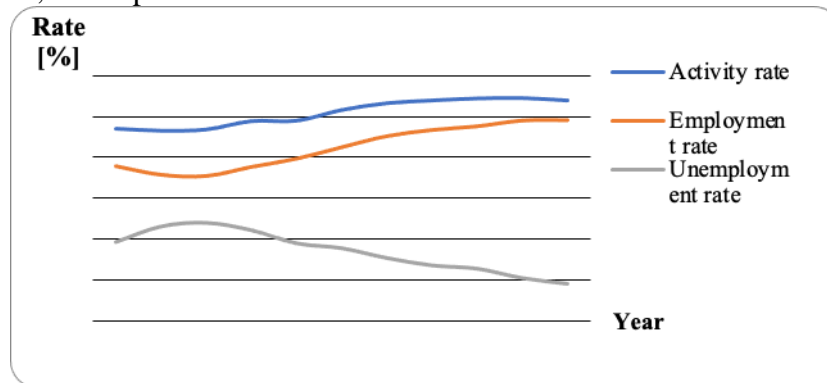
Employment conditions (both in rural and urban areas) depend on many factors that can affect the opportunities available to the wide population. Depending on the geographical characteristics, the accessibility of the terrain and the development of the infrastructure, the opportunities for employment in the given region may vary significantly. The level of economic development in the observed area directly depends on the aforementioned factors, as well as financial investments and local or regional development strategies. According to the recurring "rule", investments are always greater and more present in urban and suburban areas, than when it comes to investing in rural areas, which directly affects the worse employment opportunities for the rural citizens.

2. Basic indicators of the state of the labor market

Besides local events, global events, crises and trends can also greatly affect the labor market conditions in the observed country - in this case, in the Republic of Serbia. Thus, the global economic crisis (which had its dominant effects in the period 2007 – 2009) directly affected the conditions on the labor market in the Republic of Serbia, while its impact on this labor market was felt mainly in the period 2011 – 2013 (see *Chart 1*). Because of the impact of the crisis, *Chart 1* will show a longer time period than mentioned in the article title, so that a better "starting point"

picture is offered, in order to get a better overall understanding of the situation on the labor market in Serbia.

Chart 1. Rates of activity, employment and unemployment in the entire labor market of the Republic of Serbia, in the period 2010 – 2020.



Source: Labor force surveys of the Republic of Serbia’s Statistics Institute, for the aforementioned period²⁸; Author’s illustration.

The characteristics of the labor market in Serbia were unfavorable even before the crisis, as rates of economic activity and employment were low (Matković, Mijatović and Petrović, 2010). As seen in *Chart 1*, all of the mentioned rates show changes in the displayed trends, namely in the years 2011 and 2012, where the activity rate of the population of the Republic of Serbia started moving upward. Since 2015, the activity rate remained somewhat constant, at around 54% of total population of working age (older than fifteen, and younger than sixty-four years of age). Due to the aforementioned effect on the labor market trends, rural population receives fewer opportunities overall. The quality of those opportunities (if any) may also be worse than the employment opportunities in the urban areas, as it will be seen later in the article. Božić (2012) points out that the leading problem of the rural labor market is low employment rate (with bad overall structure), as well as high unemployment rate (see *Chart 2*).

Chart 2. Rates of activity, employment and unemployment of the urban and rural population in the Republic of Serbia for the period from 2015 – 2020.



Source: Labor force surveys of the Republic of Serbia’s Statistics Institute, for the aforementioned period; Author’s illustration.

²⁸ *Note:* Republic of Serbia’s Statistics Institute conducted an audit of the data in the year of 2015, so there may be slight data mismatch in the series before and after.

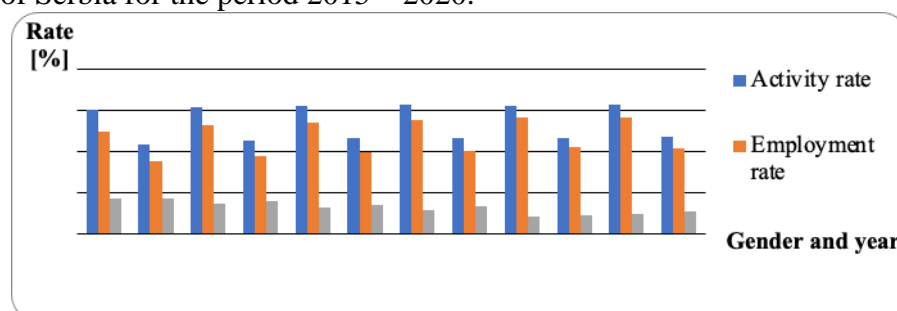
An oscillatory trend can be noticed by comparing the characteristics of the urban and rural population. For the activity rate of the urban population, the value of the rate in the vicinity is valid of an average amount of around 50%, with a slightly larger drop recorded in 2017. This decrease in value of the rates of activity and employment, which is also recorded in the values of the rates that characterize rural population, can be linked to mass layoffs of employees in the public sector in that year. For the rural population, the rates of active and employed population are significantly higher than the same rates in urban areas, and *"the reason behind this is the fact that rural areas provide more the possibility of employing less educated people, which especially applies to work in agriculture"* (Bogdanov and Babović, 2012). It should be borne in mind that the total employed population includes formally (persons who work under the terms of the previously accepted Employment Agreement), but also informally (those that work without a formal contract or the possibility to exercise rights on a mandatory basis social insurance) employed persons. These workers can be employees, self-employed or supporting members households, while this last category is informal by definition. (Arandarenko, 2011). Furthermore, Arandarenko (2011) states that informal employment is often present in the rural environment, and along with the notion of an informally employed rural person, he often mentions adjectives "less-favored" and "poor", and mentions low income as a lead characteristic of rural areas and the population employed in the rural labor market. Vulnerable employment also has a significant impact on the state of rural the labor market, which will be discussed further in article. All of these statements can be used as explanations for the fact that the rural population has a higher share of the employed population, in comparison to urban areas.

When observing only the values of the aforementioned rates, Božić (2011) states that, if activity and employment rates of the rural population are higher than the same rates in the urban population, it directly indicates that it must be a country in the process of economic transition, or coming out of the transition. By further comparing between types of areas and their population, it can be seen that the unemployment rates are lower in the rural ones, for the entire time series. This kind of phenomenon can be brought about in direct connection with informal and vulnerable employment, as the population in rural areas, although informally employed, often performs "helping jobs" (helping households members), without expected any type of payment in return. On the other hand, the appearance of helping members in urban areas is almost non-existent.

2.1. The labor market of the Republic of Serbia - analysis by gender and type of area

According to Bogdanov (2015), the changes in the activity rates of the male and female workforce are the most important indicators of the state of the labor market.

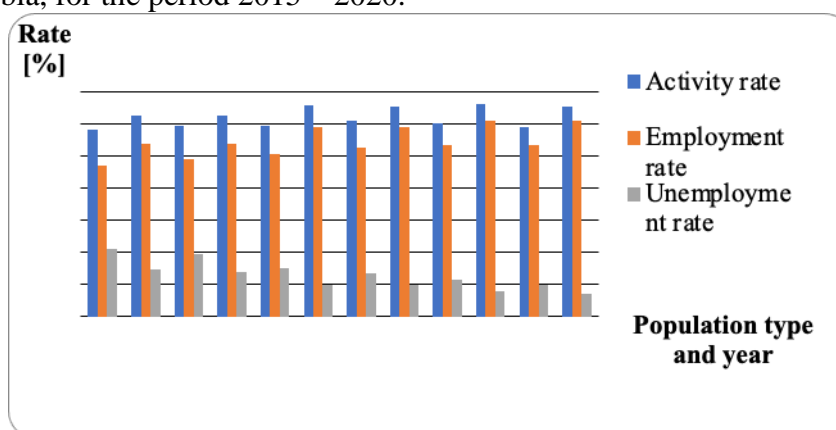
Chart 3. Rates of activity, employment and unemployment of the male and female population of the Republic of Serbia for the period 2015 – 2020.



Source: Labor force surveys of the Republic of Serbia's Statistics Institute, for the aforementioned period; Author's illustration.

The data in *Chart 3* shows that men are more included in the overall labor market population, compared to the female population. Consequently, the unemployment rate values are higher in women. When observing the labor market and the overall conditions and opportunities, it is important to mention that, in Serbia, more often than not, women receive fewer opportunities in global. As rural population faces more difficulties than the population in urban areas, women in rural areas are a particularly vulnerable group when it comes to employment opportunities and education. Such analysis is important for monitoring the fulfillment of the goals in the "Europe 20" Strategy, within which the member states of the EU, as well as the states-candidates have various duties prescribed, in order to fulfill the global Strategy (Božić, 2011). In case of Serbia, the most important document of this sort is the National Employment Strategy²⁹ for the period 2011 – 2020, one of whose goals is gender equality, that is, increasing the participation of the female population in the total employed population of the Republic of Serbia. Additional importance is pointed towards the female population in rural.

Chart 4. Rates of activity, employment and unemployment in the male population of the Republic of Serbia, for the period 2015 – 2020.



Source: Labor force surveys of the Republic of Serbia's Statistics Institute, for the aforementioned period; Author's illustration.

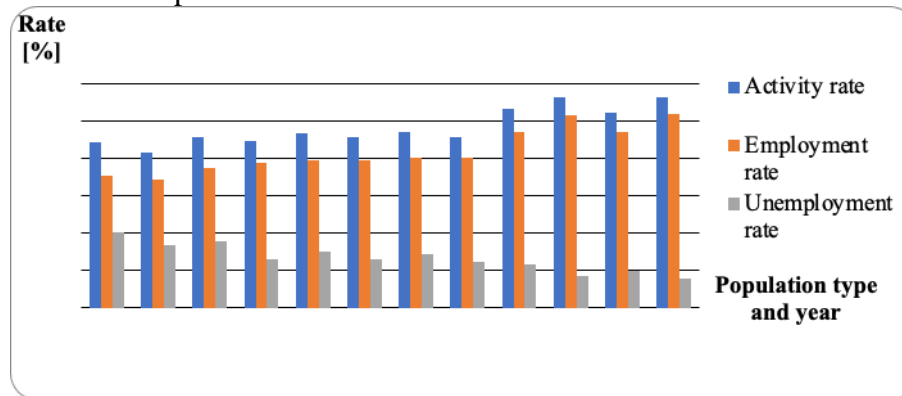
When the activity rate is observed, it can be noticed that the male population in rural areas holds a higher percentage. Employment rates are higher in rural areas, which can be related to the structure of households and the division of labor among family members. This is particularly the characteristic within the scope of performing agricultural work in the rural areas. According to the same principle, the values of the unemployment rate will imply the opposite conclusions, that is, that the values of the mentioned rates are lower in rural, compared to urban areas.

Both the activity and the employment rate for the viewed time series in *Chart 5* record a slight increase, when observing the values for both types of settlements. Furthermore, if the rate values were compared according to the type of settlement, it could be concluded that both rates are lower when it comes to rural areas (until the year of 2019), although they are almost of the same amount. Activity rate of the average female population for both types of areas is around 43%. The employment rate is approximately 33% which is lower than the national average. Bearing in mind the previously mentioned goal of the National Employment Strategy, a positive result can be expected, because of an increase in value of the observed rates in employed female population.

²⁹ "Official Gazette of RS", No. 37/11.

This, however, only applies to the urban areas, while in rural settlements this value still shows unsatisfactory results.

Chart 5. Rates of activity, employment and unemployment of the female population of the Republic of Serbia for the period 2015 – 2020.



Source: Labor force surveys of the Republic of Serbia’s Statistics Institute, for the aforementioned period; Author’s illustration.

The increase in the value of the employment rate in the female population in rural areas (where agriculture tends to be the leading sector), could be linked to the measures used in the Agriculture and Rural Development Strategy of the Republic of Serbia³⁰, as the Strategy for the period 2014 – 2024 has a section for the credit support, available to women under 40, who are owners agricultural farms. In order to be an owner, their farm must be registered, and they must hold the status of a formal employee, which may result in the overall increase of the employment rate of the female population.

3. Employment varieties and characteristics in the Serbian population

The economy of the Republic of Serbia consists of two large sectors – the economic sector and sector of non-economic activities - each of which is made up of a certain number of sub-sectors. Depending on many factors, the distribution of employed persons per sector, as well as differences between groups of employees, exist and change over time.

All sectors within the system record their own characteristics. It follows that the labor market today is *"more polarized and segmented measure than ever before, with dichotomies affecting formal versus informal employment; employment in the public sector versus employment in the private sector; modern VS traditional labor market; wage labor versus self-employment; standard VS vulnerable employment; paid versus unpaid work"* (Arandarenko, 2011).

When observing employment in all sectors in the Republic of Serbia, per area type, for the time series 2015 – 2020, the following can be concluded: depending on the age of the workforce, the majority of employees tend to be between 35 and 44 years of age. This differs from the previous years (2014), where most employees belonged to the working group forces aged between 45 and 54 years of age. Also, apart from the trend of "rejuvenation", that is, bigger participation of the younger population in the total number of workforce, an increase in the total number was also noted – for example, in 2018 this number was around 2,832,900 employees, which is about 412,000 more employees than in compared to 2014, which represents an increase of about 15 percentage points. This growth predominantly follows urban areas, since the

³⁰ "Official Gazette of RS", No. 85/2014.

participation of employees in these areas is increasing. Compared to participation of the employed rural population in the total employed population, it shows that it is decreasing.

Table 1. Employed population of the Republic of Serbia by age, for the period 2015 – 2020.

Age range	Year and share in the total population											
	2015		2016		2017		2018		2019		2020	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
15 - 24 years of age	3,9	6,4	4,5	6,8	4,9	6,4	4,5	6,7	71,6	6,7	4,2	6,1
25 - 34 years of age	24,2	19,2	23,6	18,8	22,8	19,6	23	20,2	382,2	19,3	21,7	19,7
35 - 44 years of age	30,4	23,8	30	22,4	30,4	22,1	30,2	22,5	501,7	22,0	30,1	22,1
45 - 54 years of age	26,1	24,7	24,9	23,5	24,7	22,8	24,9	22,1	409,3	22,8	25,1	23,0
55 - 64 years of age	14	18,1	14,9	19,2	15,2	19,6	15,3	19,1	269,7	18,9	16,6	18,6
Over 64 years of age	1,3	7,7	2,1	9,3	2,1	9,5	2,1	9,4	41,2	10,3	2,3	10,5
Total (%)	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
In thousands	1.474,4	1.084,1	1.160,2	1.159,1	1.595,9	1.198,9	1.636,5	1.196,4	1.675,5	1.225,5	1.636,2	1.258,6

Source: Labor force surveys of the Republic of Serbia's Statistics Institute, for the aforementioned period.

In urban areas, the majority of employees are between 35 and 44 years of age, while the case of rural areas is somewhat different; in the rural areas of Serbia, the participation of employed persons in the age group of 45 to 54 years prevails, i.e., in rural areas, the population is "older" than the urban population by an average of 10 years.

3.1. Employed population, according to the type of Employment Agreement and the rights they have, based on the Agreement

In order to enter an employment engagement of any kind, it is necessary that the employer and the employee person (or persons) conclude a certain type of employment contract - it can be oral, if it is a type of "work per oral agreement", or in writing, in accordance with the Labor Law³¹. According to this Law, "employment can be established with a person who is at least 15 years old and meets other conditions for working on certain jobs, determined by the Law, that is, by the rulebook on organization and job systematization" ("Official Gazette of the RS").

Table 2. Employed population of the Republic of Serbia, by type of the employment agreement, for the period 2015 – 2020.

Contract type	Year and share in the total population											
	2015		2016		2017		2018		2019		2020	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Written contract	94,2	90,4	94,2	89,9	94,1	90,6	94,0	90,9	94,9	91,6	96,0	94,3
Oral agreement	5,8	9,6	5,8	10,1	5,9	9,4	6,0	9,1	5,1	7,9	4,0	5,7
Total (%)	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
In thousands	1.222,0	565,9	1.247,3	589,9	1.317,0	623,3	1.374,3	658,4	1.410,1	687,6	1.392,1	721,7

Source: Labor force surveys of the Republic of Serbia's Statistics Institute, for the aforementioned period.

Per information in Table 2, the most common employment engagement in Serbia is in the form of the written contract. This is an agreement on the execution of work, is of a formal nature and includes all information and tasks related to the job offered by the employer to the employee, which the employee is obliged to fulfill ("Official Gazette of the RS"). In the 2015 – 2022 time series, there has been an increase in the number of employed people, when concluding both types of contracts, whereby the number of employed persons who signed a formal (written) had a value

³¹ "Official Gazette of the Republic of Serbia", No. 24/2005, 61/2005, 54/2009, 32/2013, 75/2014, 13/2017 - US decision, 113/2017 and 95/2018 - authentic interpretation.

of 94%, while the number of those who are engaged based on an oral contract, the amount was about 7% of total employment contracts.

When comparing urban and rural areas, it shows that, in both cases, the participation is higher in the employed population who perform tasks on the basis of a written employment contract, whereby there is also a greater number of employed persons in urban areas, compared to rural areas. There has also been an increase in the total number of people that work based on a written contract, for the relevant time series.

The rights that employed persons have (on the workplace) depend on what the employment relationship is, that is, on the basis of which the employment contract was concluded. Among other things, every written contract must include the employees' rights to: have a paid (annual) vacation (Article 68 of the Labor Law), a paid leave - sick leave (Article 77 of the Labor Law), a pension (and other) insurance (Article 119 of the Labor Law) and health insurance (Article 120 of the Labor Law). Staff can exercise the right to the mentioned benefits depending on the characteristics of the work that they perform, that is, the existence of an employment relationship does not necessarily guarantee the realization of the right to the mentioned benefits for employees.

Table 3. Share of the urban and rural population in the total population that has (or does not have) certain rights, based on their Contract, for the period 2015 – 2020.

Rights included in the Contract	Year and share in the total population											
	2015		2016		2017		2018		2019		2020	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
The right to pension insurance	91,6	87,5	92,3	88,0	92,7	89,4	93,7	90,4	94,9	92,1	95,1	93,7
No right to pension insurance	8,4	12,5	7,7	12,0	7,3	10,6	6,3	9,6	5,1	7,9	4,9	6,3
The right to health insurance	91,7	87,7	92,3	88,1	92,6	89,5	93,4	90,4	94,2	91,6	94,9	93,8
No right to health insurance	8,3	12,4	7,7	11,9	7,4	10,5	6,6	9,6	5,8	8,4	5,1	6,2
The right to paid sick leave	88,3	84,1	88,5	84,3	90,3	86,3	91,1	87,0	93,9	91,5	93,1	91,9
No right to paid sick leave	11,7	15,9	11,5	15,7	9,7	14,0	8,9	13,0	6,1	8,5	6,9	8,1
The right to paid annual leave	88,2	83,5	88,8	84,1	90,0	86,0	90,6	86,3	91,7	89,2	92,8	91,5
No right to paid annual leave	11,8	16,5	11,2	15,9	10,0	14,0	9,4	13,7	8,7	10,8	7,2	8,5
Total (%)	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
In thousands	1.122,0	565,9	1.274,4	583,9	1.317,0	623,3	1.374,3	658,4	1.410,1	687,6	1.392,1	721,7

Source: Labor force surveys of the Republic of Serbia's Statistics Institute, for the aforementioned period.

Based on the data presented in *Table 3*, there's a greater participation of the population that dispose to the specified rights, in comparison to those who do not have the specified benefits and rights, globally. Also, for all of the mentioned rights, the number, that is, the participation of the population that has certain rights is higher in urban areas, compared to rural areas. Similarly, participation of employed persons who do not have the mentioned rights in the total number of employees is greater in rural areas, in relation to the urban ones. The reason behind this, among other things, can be the diversification of jobs performed in these areas, as in urban areas the employment possibilities are more diverse. On the other hand, *"the largest part of the rural workforce in Serbia (around 45% of the employed rural population) work in agriculture"*, while it is present that *"the insufficient development of public services and the service sector in rural areas are the reason for the small number of jobs in these activities, so their representation in total employment is low, as expected"* (Bogdanov, 2007). As agricultural jobs are mostly seasonal by their nature, it is expected that the employees in this case don't have most, if not all, of the aforementioned rights.

3.1.1. Employed population according to the type of work performed and type of settlement

The dynamic of work that will characterize the work relationship between employees and employers is regulated and defined by the Articles 37 - 45 of the Republic of Serbia's Labor Law. Therefore, they differ: permanent employment, temporary employment, part-time and seasonal employment dynamics. Details of the type of work must be included in the Employment Agreement.

Table 4. Employed population of the Republic of Serbia, according to the type of employment and the type of area, for the period 2015 – 2020.

Employment type	Year and share in the total population											
	2015		2016		2017		2018		2019		2020	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Permanent employment	79,8	74,4	78,2	71,9	79,3	72,6	79,4	72,0	78,7	74,3	80,8	76,8
Temporary employment	16,2	18,1	18,0	20,7	17,7	21,5	18,1	23,3	18,6	21,3	17,0	19,6
Seasonal employment	1,4	3,5	1,2	3,5	1,0	2,9	0,9	2,7	1,1	2,5	0,8	1,8
Part-time employment	2,5	3,9	2,5	3,9	2,0	2,9	1,6	2,0	1,6	2,0	1,4	1,8
Total (%)	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
In thousands	1.222,0	565,9	1.274,4	589,9	1.317,0	623,3	1.374,3	658,4	1.410,1	687,6	1.392,1	721,7

Source: Labor force surveys of the Republic of Serbia's Statistics Institute, for the aforementioned period.

Table 4 clearly shows that in both types of areas, the most common form of work is permanent employment, whereby a decrease in the number of employees in this category is observed since 2020. This may be expected, as the pandemic of Covid-19 affected large numbers of people (in all employment types) and caused them to either switch jobs, or stay unemployed for a while. In urban areas, compared to rural, there's a greater number of employees in all categories, except for the category seasonal workers, which mostly prevails in rural areas. As seasonal work is a characteristic of agricultural areas and operations in agricultural practice, this is expected. Part-time jobs are rare in both one and the other type of settlement.

3.2. Analysis of the employed population, according to professional status and type of area

The professional, i.e. legal status of an employee differs depending on his responsibilities, as well as whether the person employs additional workers. In this sense, Table 5 shows four categories of employees according to legal status and responsibilities.

Table 5. Employed population of the Republic of Serbia, according to professional status and the type of settlement, for the period 2015 – 2020.

Employment type	Year and share in the total population											
	2015		2016		2017		2018		2019		2020	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Independent workers with employees	4,5	2,8	4,4	2,2	4,4	2,0	4,7	2,2	4,7	2,1	3,8	2,2
Independent workers without employees	11,0	28,1	12,2	31,1	11,9	64,0	10,5	30,8	10,7	31,7	10,3	30,9
Employees	82,9	52,2	81,7	50,3	82,5	52,0	84,0	55,0	84,2	56,1	85,1	57,3
"Helping" employees	1,6	16,9	1,7	16,5	1,1	12,0	0,9	12,0	0,8	10,1	0,8	9,6
Total (%)	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
In thousands	1.474,3	1.084,1	1.559,2	1.160,2	1.595,9	1.198,8	1.636,5	1.196,4	1.675,5	1.225,5	1.636,2	1.258,6

Source: Labor force surveys of the Republic of Serbia's Statistics Institute, for the aforementioned period.

According to the professional status, employees take the leading position in both types of settlements, although the number of employees is significantly higher in urban areas (with about a 34 percentage point difference in participation employed in this category). There are approximately twice as many independent workers with employees in urban areas, while independent workers without employees predominate in rural areas (by about 20 percentage

points more). One of the characteristics of rural environments is the category of “helping” workers – household members that occur in the structure of the employed population. While, in the urban population, in this category is in the range of very small values (up to 2%). Helping members of households are also a form of the vulnerable employment (Bogdanov, 2015) and are common in performing agricultural work. *“According to the legal status of farms, the workforce in agriculture of the Republic of Serbia is almost entirely engaged in family farms (98.2%), and only 1.8% of persons work on the farms of legal entities and entrepreneurs. According to the number of persons engaged in agricultural activity on the farm, it has been concluded that they usually work on farms with one to two members, i.e. employed persons (68.6%), while there are negligible numbers of large farms, where seven or more members worked in agriculture (0.4%)”* (Bogdanov and Babović, 2012).

3.3. Employed population, by the sector of their employment

The division of activities in the economic system of Serbia has already been discussed. For the sake of easier comparison and analysis, the whole economy of the Republic of Serbia has been divided into four sub-sectors – activities (agriculture, industry, constructions and service activities).

Table 6. Employed population of the Republic of Serbia, by sector of their employment and the type of area, for the period 2015 – 2020.

Employment type	Year and share in the total population											
	2015		2016		2017		2018		2019		2020	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Agriculture	4,7	39,6	4,8	37,2	4,1	34,7	3,7	32,7	1,6	5,6	1,1	4,4
Industry	20,4	19,2	21,1	18,9	22,1	20,0	23,1	21,7	25,1	37,1	24,6	36,6
Constructions	5,0	4,0	4,2	4,3	4,0	4,3	4,4	4,5	4,1	6,1	4,5	7,1
Service activities	69,9	37,2	69,9	39,6	69,9	40,9	68,9	41,1	69,2	51,2	69,8	51,8
Total (%)	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
In thousands	1.490,9	1.083,3	1.559,2	1.160,2	1.595,9	1.198,8	1.636,5	1.196,4	1.410,1	687,6	1.392,1	721,7

Source: Labor force surveys of the Republic of Serbia’s Statistics Institute, for the aforementioned period.

As expected, agricultural production is almost entirely absent in urban areas, while in rural areas it used to represent the leading sector until 2016. Some of the characteristics of employees in the agricultural sector are predominantly *“poor educational structure and insufficient level of professional skills of farmers, which then leads to extensiveness in production, difficult penetration of innovative technical and technological solutions, diversification, progress in product quality, low productivity of workers, poor production structure, lack of connectivity farmers and others”* (Zubović, 2011). During 2016 there was a tendency between employees to transfer from the agricultural sector into the service sector in rural areas. In urban environments, on the other hand, the highest representation of the labor force is contained in the sector of service activities, which sums up to 70% of employees. The industrial sector hires approximately the same amount of people in both types of settlements, while the sector of constructions is in third place and also has a similar number of employed persons.

3.3.1. Employed population by type of occupation

Within each sector of the economic system of Serbia there are many different occupations, in accordance with jobs that are performed in them. For the sake of comparison, the occupations are grouped and arranged in the *Table 7*, based on the rights that workers have at the workplace, the right to make decisions and so on other sorting factors.

Table 7. Participation of employed urban and rural population in certain occupations, in total number of employees, for the period 2015 – 2020.

Employment type	Year and share in the total population											
	2015		2016		2017		2018		2019		2020	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Managers (directors), officials and legislators	5,1	1,7	4,8	1,4	4,2	1,2	4,2	1,1	2,2	1,0	2,4	1,1
Experts and artists	19,7	4,6	19,9	4,1	20,6	3,9	20,7	4,7	21,5	7,6	21,7	8,5
Engineers, professional associates and technicians	16,3	5,9	15,8	5,5	16,0	5,7	15,7	6,1	16,8	10,6	16,6	9,9
Administrative officers	9,0	4,2	8,8	3,9	9,4	4,1	10,4	4,2	12,4	7,1	12,7	7,6
Service and trade occupations	18,4	12,8	18,0	11,6	18,1	11,6	17,3	12,0	17,3	18,1	16,9	18,4
Farmers, foresters, fishermen and related occupations	3,7	39,3	4,4	41,7	3,8	40,1	3,2	36,8	0,2	0,8	0,2	0,9
Craftsmen and related occupations	11,4	12,0	11,4	12,0	10,7	12,6	10,8	12,7	10,0	18,3	10,9	18,7
Machine and plant operators, fitters and drivers	7,6	8,7	8,5	9,1	8,8	10,0	9,4	11,1	10,5	20,2	10,1	20,1
Simple occupations	7,8	10,5	7,5	10,2	7,6	10,4	7,7	10,9	8,3	15,6	7,8	14,0
Military occupations	1,0	0,4	0,8	0,5	0,8	0,4	0,7	0,3	0,8	0,7	0,8	0,8
Total (%)	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
In thousands	1.490,9	1.083,3	1.559,2	1.160,2	1.595,9	1.198,8	1.636,5	1.196,4	1.410,1	687,6	1.392,1	721,7

Source:

Labor force surveys of the Republic of Serbia's Statistics Institute, for the aforementioned period.

The participation of managers, officials and legislators in the total number of employees is higher in urban areas, where it values around 5%, while in rural areas it is around 1.5%, depending on the year observed. Professionals and artists are also more represented in urban areas. Engineers, professional associates and technicians are also more present in urban areas, where they participate with about 17%, while in rural areas they value around 6%. For administrative officers, it applies that in urban areas they participate with 9%, and around 4% in rural areas. Machine and plant operators and simple occupations are approximately equally represented in urban and rural areas. Employees in agriculture, foresters and similar occupations are dominant in rural areas, with a participation of about 40%, while 3% of these occupations participate in the total number of employees in urban areas.

3.4. Employed population, according to average weekly working hours

Depending on the difficulty of the work being performed, work organization and similar factors, time work is grouped into six intervals (*Table 8*). Working hours are regulated by the Labor Law and must be incorporated in the Employment Agreement.

Table 8. Employed population of the Republic of Serbia according to average weekly working hours and type of settlement, for the period 2015 – 2020.

Duration of work per week	Year and share in the total population											
	2015		2016		2017		2018		2019		2020	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
1 - 14 working hours	0,7	1,2	0,6	0,7	0,5	0,6	0,5	0,6	0,5	0,7	1,1	2,4
15 - 35 working hours	3,7	6,1	3,0	5,2	3,1	5,6	3,2	5,5	3,1	6,2	4,5	12,1
36 - 48 working hours	76,1	49,6	76,0	46,2	77,7	49,5	80,2	53,5	795,6	52,9	84,8	60,7
49 - 59 working hours	5,3	8,4	4,6	6,8	3,3	6,4	3,1	5,2	2,9	5,0	3,3	9,1
More than 60 working hours	4,5	9,5	3,7	7,2	3,2	6,1	3,2	5,5	2,8	5,6	3,3	9,4
Working hours change every week	9,7	25,2	12,1	33,9	12,3	31,8	9,8	29,7	11,3	29,7	3,1	6,4
Total (%)	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
In thousands	1.474,3	1.084,1	1.559,2	1.160,2	1.595,9	1.198,8	1.636,5	1.196,4	1.675,5	1.225,5	1.636,2	1.258,6

Source: Labor force surveys of the Republic of Serbia's Statistics Institute, for the aforementioned period.

In both rural and urban settlements, the most common working hours are from 36 to 48 hours per week, where the number of employed workers, for all other mentioned intervals (except those whose working hours vary), is higher for employees in urban areas. It was noticed that the number of these workers increases every year, and in 2018 this number in rural areas valued about 53.5%, while in urban areas it was about 80.2% of employees. Employees whose working hours vary are on second place when it comes to their percentage and their number has also slightly increased in 2016.

3.5. Employed population by level of education

Quality and adequate education is one of the key factors for the successful performance on the workplace, and also for achieving desired and expected business results. In that regard, *Table*

9 was created to show the diversification of labor force on the labor market in the Republic of Serbia, based on their level of (formal) education.

Table 9. Employed population of the Republic of Serbia by level of education, for the period 2015 – 2020.

Level of acquired education	Year and share in the total population											
	2015		2016		2017		2018		2019		2020	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Without any formal education	0,1	0,6	0,1	0,5	0,1	0,5	0,1	0,4	0,1	0,3	0,1	0,2
Elementary school graduates	6,7	31,5	7,1	33,0	6,8	32,1	6,3	30,9	6,7	30,2	6,6	27,7
High school graduates	57,5	57,7	56,6	57,0	55,8	57,9	55,9	58,3	55,2	59,1	55,3	61,1
Higher education graduates	35,8	10,2	36,2	9,4	37,2	9,6	37,8	10,4	38,1	10,4	38,0	11,1
Total (%)	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
In thousands	1.472,3	1.084,1	1.559,2	1.160,2	1.595,9	1.198,8	1.636,5	1.196,4	1.675,5	1.225,5	1.636,2	1.258,6

Sou

rcer: Labor force surveys of the Republic of Serbia’s Statistics Institute, for the aforementioned period.

The largest share of employed workers on the labor market of the Republic of Serbia is in favor of high school (secondary) education, about 58% of all employees. Higher education ranks second in urban areas where they participate with 35%, while the same value for rural areas is about 9% of employees. A difference is also present in lower (primary) education, where rural areas are leading: the number of employees with primary education is about 34% of employees, while in urban areas, that share is around 7%. Uneducated population in the total number of employees is almost nonexistent, although, there might have been some difficulties with collecting these data, as some of the people didn’t want to declare themselves as “uneducated”, or data on the specified group does not exist.

4. Characteristics of the unemployed population in the Republic of Serbia

Unemployment represents the occurrence and state of the labor market in which persons that are qualified for performing certain jobs, for various reasons and due to various factors, cannot perform these jobs or cannot find an occupation at all (Bejaković, 2003). It is impossible to have a complete picture of the rural labor market without analyzing unemployment.

4.1. Unemployed population according to the level of education

Just as the level of education is crucial for adequate performance and, in general, the acquisition of a work engagement, the absence of the required levels of education and inadequate education can be a prerequisite that leads to unemployment.

Table 10. Unemployed population of the Republic of Serbia by level of education, for the period 2015 – 2020.

Level of acquired education	Year and share in the total population											
	2015		2016		2017		2018		2019		2020	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Without any formal education	-	-	0,3	-	-	-	-	-	-	-	-	-
Elementary school graduates	10,0	22,0	10,7	21,6	10,1	20,8	12,4	21,6	13,5	23,5	11,6	20,6
High school graduates	63,0	66,2	62,3	65,3	61,5	65,9	61,5	63,5	61,1	63,8	59,8	65,5
Higher education graduates	26,9	11,5	26,7	12,5	28,2	12,7	26,0	14,5	25,3	12,0	28,6	13,6
Total (%)	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
In thousands	366,1	192,2	333,4	156,0	282,0	153,1	265,4	146,7	220,0	115,9	177,9	108,6

Source: Labor force surveys of the Republic of Serbia’s Statistics Institute, for the aforementioned period.

The largest number of unemployed people on the labor market of the Republic of, in the case of both types of settlements, is within those who are high school graduates (without further education). In urban areas, this share is around 64% and a drop in the number of unemployed can be noticed in the time series shown; in rural areas, this trend oscillates around 63%. For persons

without primary education, there are no adequate and comparable data. Those unemployed with a lower level of education are twice as present in rural areas, where they participate with about 24%. Unemployed persons with a higher level of education are more prevalent in urban areas, where that number reaches 24% of the unemployed, while in rural areas it is around 10%.

4.2. Unemployed population according to their work experience

Work experience and the absence of it can be some of the key factors of the existing unemployment.

Table 11. Unemployed population of the Republic of Serbia according to work experience, for the period 2015 – 2020.

Previous working experience	Year and share in the total population											
	2015		2016		2017		2018		2019		2020	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Without any working experience	72,6	67,3	74,9	70,6	76,2	70,3	77,1	71,1	75,8	67,2	75,8	67,2
With previous experience	27,5	32,7	20,6	29,4	23,8	29,7	22,9	28,9	24,2	32,8	24,2	32,8
Total (%)	100,0	100,0	29,4	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
In thousands	366,1	192,2	333,4	156,0	282,0	153,1	265,4	146,8	220,0	115,9	177,9	108,6

Source: Labor force surveys of the Republic of Serbia's Statistics Institute, for the aforementioned period.

The labor market of the Republic of Serbia is, in terms of unemployment, characterized by a higher participation of the unemployed population with working experience, compared to those without any working experience. Compared to rural areas, urban areas have the participation of this subgroup of the unemployed larger by around 10 percentage points. In urban areas, the share of the unemployed population with working experience around 70%, while in rural areas it is 57%. There are about 28% of unemployed people without working experience in urban areas, and about 33% in rural areas.

4.3. The unemployed population of the Republic of Serbia, by the duration of their unemployment

Time spent on searching for a job can be another way of classifying the unemployed population, for further analysis of unemployment itself. It can indicate the type of unemployment which is represented, because the reasons for the absence of employment dictate the type of unemployment - for example, *"seasonal unemployment, as a result of the impossibility of performing some jobs, as the jobs are directly related to seasons of the year, or people are prevented of working by bad weather"* (Bejaković, 2003).

Table 12. The unemployed in the Republic of Serbia, according to length of time spent on searching for a job, for the period 2015 – 2020.

Duration of job search	Year and share in the total population											
	2015		2016		2017		2018		2019		2020	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Less than 12 months	34,9	36,7	33,4	38,0	39,2	40,0	40,1	41,5	41,5	42,1	46,4	43,5
12 - 24 months	23,4	20,8	21,4	19,9	19,7	17,0	18,0	17,4	17,0	15,5	17,8	19,2
2 - 6 years	28,5	27,2	29,7	26,5	25,6	25,2	24,7	22,7	24,1	22,3	20,2	20,8
Longer than 7 years	13,3	15,4	15,5	15,5	15,5	17,8	17,2	18,3	17,4	20,0	15,7	16,6
Total (%)	100,0	100,0	29,4	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
In thousands	366,1	192,2	333,4	156,0	282,0	153,1	265,4	146,8	220,0	115,9	177,9	108,6

Source: Labor force surveys of the Republic of Serbia's Statistics Institute, for the aforementioned period.

In the Republic of Serbia, the most common case is that, both in urban and rural areas, the largest number of the unemployed are those who have been looking for a job for less than a year. In

urban areas, this share is increasing every year. In rural areas, this category has also been increasing in value yearly. For the category of the unemployed who are looking for a job in the period between one and two years, this number is in constant decreasing trend for both urban and rural areas. The unemployed who have been looking for a job for a period of two to six years are present in both urban and rural areas, namely: in urban areas, this category counts around 28% with a noticed decrease in value, during this time period, while in rural areas that number is around 27%, with the same decrease. The unemployed who have been looking for a job for more than seven years is constant within both labor markets, whereas in urban and rural areas they both value around 16% on average.

5. Conclusion

This research has shown some of the basic indicators of employment in rural areas of the Republic of Serbia. For the sake of creating a more understandable picture of employment in rural areas, the entire labor market was analyzed through various factors. After that, the corresponding indicators have been presented graphically or through tables and values for urban and rural areas have been compared, that is, the labor markets were compared. The activity, employment and unemployment rates of the population have been compared globally and according to the type of settlement, and the differences in the values of these rates between the genders were also pointed out. It has been noted that the values of employment and activity rates in the time series from 2015 – 2020 are growing in the global labor market of the Republic of Serbia, and, therefore in rural areas as well. Analogously, it is opposite for the unemployment rate. Significantly lower participation was indicated women in the amounts of these rates, in relation to the participation of the male population, which was also observed at rural labor market.

An analysis of employment on the labor market of the Republic of Serbia was also conducted, and thereby the conclusions were made regarding rural areas of work. The employed population was analyzed on the basis of a number of different characteristics: age, level of education, sectors in which they are employed, the work they perform, etc. Distribution within sectors of employment on the rural labor market is oriented towards the agricultural sector, within which 40% of employees are present, while in urban areas, this is the case with the service sector (70%). A tendency to transition was also noticed within the rural population, so that they are transferring from the agricultural sector to the service sector after the year of 2016. The number of employees, according to the level of education, as a qualification characteristic of the workforce, is somewhat higher within the urban population, compared to the rural population, for almost all levels of education.

When observing the characteristics of the unemployed population, it has been concluded that there are more unemployed people in urban areas, but that is to be expected, as a result of the fact that they have more inhabitants in total. Relations of the unemployed population by the category are approximately the same for urban and rural areas, when compared internally, or, sometimes, the case is worse for the inhabitants of rural areas. In particular, the problem of the low level of education within the population in rural areas is the key, as a negative influence on the possibility of finding a job, which is a consequence of many factors of a worse quality of life in rural areas. It has also been noticed that the unemployed population is, regardless of the type of settlement, most often looking for a job for less than a year. The share of the unemployed is higher for the population with some working experience (when comparing them to the ones without any experience) - in urban areas it prevails with 70%, and in rural areas with 60%.

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INFORMATION-COMMUNICATION SYSTEMS IN INTERNATIONAL FORWARDING AND CUSTOMS BUSINESS

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Abstract: *For every forwarding enterprise, it is important to stay in step with the rapid technological development in modern transport system. Advanced technological base will enable modern forwarding companies to increase their competitiveness on the market for transport services. In the contemporary forwarding company, information communication technology is used in every segment of business, from the moment the company receives a request, until performing the service toward the client. The purpose of this paper is to define information communication systems that are used for data processing and exchange, cargo tracking and transport management, warehouse management, client communication. all in forwarding enterprise. Forwarding companies get speed, flexibility and profitability in this way. This paper discusses the system for electronic exchange of documents, the system for managing transport, the system for tracking cargo and vehicles, the system for warehouse management, the system for receiving orders and the system for exchanging documents in customs procedures. This review will greatly contribute to the understanding of the process of functioning of information flows in a forwarding company, as well as to the identification of the basic information technologies necessary for the normal functioning of this company in a competitive environment.*

Key words: *international business, international shipping, customs, information technology*

INTRODUCTION

The term information technology is a modern expression that denotes a combination of computer and telecommunication technologies that are used to collect, process, store, exchange and issue information (Malkov, 2017). The term modern information technology most often refers only to computer and telecommunication information technologies. Regarding the relationship between information systems and information technologies, it should be said that information systems do not have to use modern information technologies. The term ICT (information and communication technologies) includes all technical means that are used for the purpose of handling information and enabling communication. In other words, ICT consists of information technology, telephony, electronic media, all types of processing and transmission of audio and video signals, as well as all types of control and monitoring based on network technologies (Čelebić & Rendulić, 2012). Continuous communication between all market participants becomes almost impossible without the application of ICT (Đorđević, 2012). "Information and communication technologies, and especially the Internet as its main tool, have become the main industry of the future and the basic infrastructure of every society, the main driver of development, generator of economic success

and a means of connecting with the developed world" (Soleša & Carić, 2016). Technological development in the modern world is essential for the survival of every company, especially in the increasingly complex market of freight forwarding and transport services. A forwarding company that is modernized through the establishment of a modern information communication system increases its chances for successful business and increased competitiveness, and in the end gets a satisfied client,

The new technology provides various advantages to its users in this industry, and an obvious benefit is the coordination of work and business between several entities at the same time, as well as saving time and money for the delivery of goods. The purpose of this research is a detailed analysis of the current state of information and communication technologies. The aim of the research is to show all the benefits brought by digitization and the improvement of technology in freight forwarding and customs operations. Following technological trends should bring constant benefits in this sphere, so we should constantly work on implementing new technology. Through the introduction of advanced technologies, transport and forwarding companies achieve significant savings through the reduction of physical distribution costs. The decrease ranges from about 8% in the income generated by sales, while in transition countries, that share amounts to 25% (Jujnović, 2010).

Software for managing the transport of goods in road traffic

The organization, monitoring and analysis of the transport of goods with all the accompanying operations is a very complex business process, taking into account the number of stages, the number of participants, the geographical distribution and the duration of the process. Such a system cannot be managed without the support of an appropriate software solution. The software solutions, in the following text, are mainly intended for companies whose activity is the road transport of goods, but also for companies that mediate in the provision of these services (<https://searcherp.techtarget.com>),

They were created as a modular application where each module represents a separate entity that is integrated with the rest of the software and other modules. An integral part of these software solutions is very often a database that is unique for all modules. NCTS and GMS modules are currently in operation.

TMS (Transportation Management Systems) software packages deserve the most attention. TMS are in focus as enablers of global trade and logistics. According to the Gartner report, the global TMS market is growing at a rate of 11.1% per year and will reach a value of \$1.94 billion by 2022 (Gartner, 2020). Most TMS systems support only road transport while some support multimodal transport as well. Multimodal transport refers to the transport of cargo under a single contract with a single carrier, which includes more than one means of transport. The carrier, designated as a multimodal carrier (MTO), is legally responsible for the entire shipment; although "real carriers" who transport cargo are often hired (Kilibarda, 2020). Today, it seems that multimodal transport is the best solution for the complex endeavors of realizing international traffic (Zelenika, 2001).

One of the most widespread TMS programs is Logistik TMS allows all data related to the transport of goods to be efficiently recorded, stored, organized, and what is more important, later easily used and analyzed when making decisions. Creating an order for the transport of goods in Logistik TMS is not just an administrative job. Every data you enter in the account has a clearly defined place and relationship with other data. This allows you to quality control the execution of tasks from the account and later a detailed analysis of the work done. Through the transport tour records, Logistik TMS enables data from multiple sources to be connected and cross-referenced

in one place. Data on issued orders, shipments of goods, vehicles, drivers, transport permits, as well as income and expenses, per diems, etc., provide a comprehensive picture that is very important to anyone who wants to have control and quality management of the transport of goods. After the finished transport tour, and even while the tour is in progress, it is possible to look at the results achieved from several aspects and compare them with the expected ones.

In this way, the processes of recording key data such as fuel consumption, time of arrival at the destination and others are automated. In addition to TMS solutions, users can additionally use solutions for working with customs. Logistics TMS can be expanded and connected to other services such as documentation services - Logistics CM (Manager). Logistics TMS can be extended and connected to other services such as vehicle tracking system services.

Overview of information systems in transport

As one of the most important tools that will raise the entire transportation role to a higher level, "Intelligent Transportation Systems" (ITS - "Intelligent Transportation System") are used. It is a term that unites all systems in order to implement information and communication technology. The new technology refines special elements of the traffic system with microchips and sensors, enabling wireless communication and thus becoming more "intelligent".

Global System for Mobile Communications (GSM)

GSM, or global system for mobile communication, is a digital mobile network used by mobile phone users. GSM is considered the second generation of mobile telephony through which information is transmitted, received and sent instantly. It operates on a frequency range of 900 megahertz (Mhz) or 1,800 MHz.

Global Positioning System (GPS)

GPS consists of 24 satellites arranged in the Earth's orbit, which send a radio signal to the Earth's surface that can be used to determine the precise position of an object on Earth. The precise location of a person, vehicle and cargo can be determined using a GPS receiver. The system enables tracking of the vehicle's location on an interactive map in real time or analysis of the route the vehicle was on, and the user can navigate to a specific address. (Zyat, et al. 2013)

Dedicated Short-Range Communications (DSCR)

DSCR, which operates in the 5.8 or 5.9 GHz spectrum and is a wireless communication channel. This technology enables two-way communication between vehicles. It plays an important role in many intelligent transportation systems, including many vehicle-to-infrastructure and vehicle-to-vehicle communication systems. DSCR is a replacement for radio frequency identification technology ("Radio Frequency Identification" - RFID), which will be discussed below (Ezell, 2010).

Traffic Message Channel (TMC)

TMC is a digital traffic news channel, the name for a channel that broadcasts news. This channel has data that is constantly updated, and is useful for checking road conditions. The devices mostly collect data within a radius of 200 km in the direction of the destination, and in case of traffic jams, the vehicle is automatically redirected to a new route, and only if the route is faster (Arco, et al. 2017).

Roadside Camera Recognition (RCR)

RCR is used for advanced toll collection. This system uses cameras placed at the entrance and exit of zones of high traffic concentration and through automatic sign recognition technology, identifies license plates and forwards them to the server that collects tolls (Budimir, 2019).

Floating Car Data (FCD)

FCD, "floating car data", is a method used to determine the speed of a vehicle on the road network. This method is based on the collected data on the speed, direction and time of movement of vehicles via mobile phones in vehicles, which act as a sensor for the traffic network. This method is less accurate than GPS, but the large amount of data increases its accuracy.

Enterprise Resource Planning System (ERP)

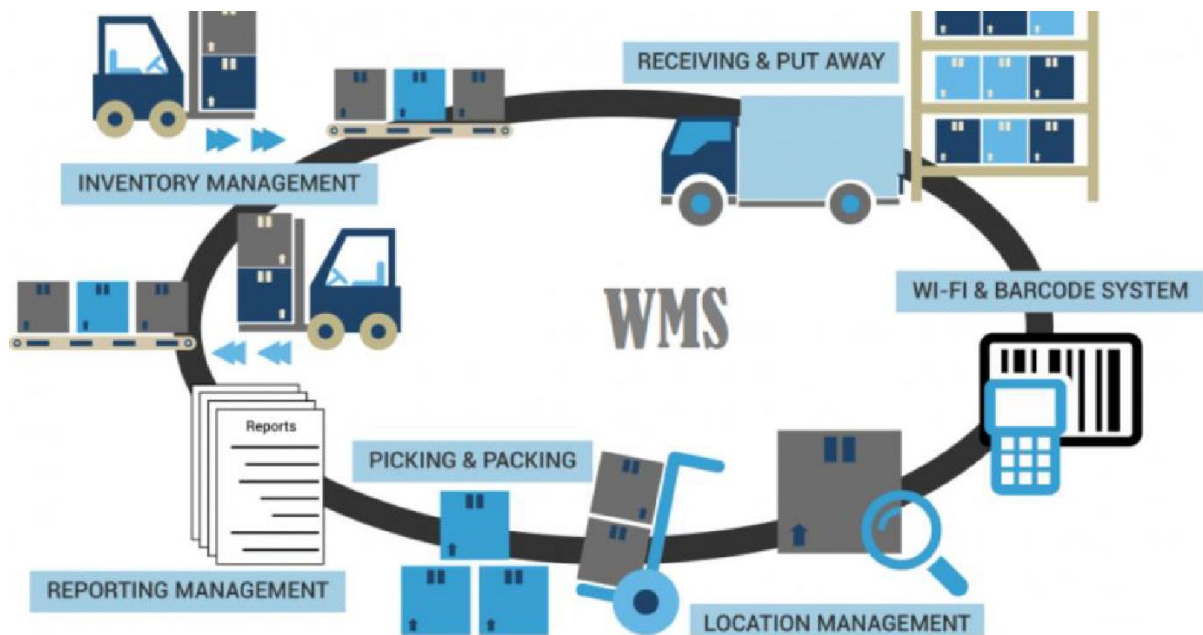
ERP is a business software that within the business system of a company that supports operational processes in the company such as: accounting, finance, procurement, storage, logistics, etc. This business software managed to unify the individual applications that performed the mentioned processes, now all those applications are integrated into this unique computerized enterprise management system. Previously, data was entered multiple times, depending on the number of applications, while now data repetition is minimized. As a supplement and upgrade to the aforementioned system, other information systems such as Customer/Supplier Relationship Management Systema appeared later; Customer/Supplier Relationship Management Systems; Product Lifecycle Management Systems (eng. Product Lifecycle Management Systems); Systems for planning and reporting ("Business Intelligence Systems"); Systems for managing company strategy ("Strategy Management Systems"). The system in the example works like this: the sales representative enters the order in the ERP; as soon as the factory starts placing the order, the delivery sector estimates the expected delivery date. The warehouse checks if the order can be filled from inventory, or if it has to go to production. When the order is realized, the information goes directly to the sales report (Ivanković, 2010).

Warehouse Management System (WMS)

A warehouse management system (WMS) is a warehouse and transportation system that facilitates the user's warehouse management from the moment goods enter the warehouse until they leave the warehouse, including inventory management, process selection and auditing. Inventory management is made easier because stock information is available instantly, when it comes to location, quantity. The collected data is processed in a central database that always has an updated report on the condition and location of the stock within the warehouse. In addition, there is the possibility of managing supply chains from manufacturers through wholesalers to retailers. It can be a stand-alone module or integrated with a TMS system for transport management or be in an ERP system, depending on the nature of the company.

It also has the ability to manage the supply chain from the manufacturer or wholesaler to the warehouse and retail and distribution centers. A WMS is often used alongside or integrated into the aforementioned "Transportation Management System" (TMS). Although the system is complex, expensive, difficult both to implement and to use, it offers a number of benefits to the company, from reducing labor costs, to improving the accuracy of stock levels, to improving customer support.

Figure 1. Schematic representation of the components of a WMS system



IT customs systems

Efficient, effective interoperable information and communication systems in modern transportation systems have become imperative in the last twenty years. Affordable, secure, integrated, interoperable electronic customs systems would facilitate electronic customs formalities to facilitate supply chain logistics when goods move in/out of the EU. Compatible IT customs systems are built in accordance with international standards in terms of data sets, which enable interactions with customs systems of third countries. In order for the customs administration system to be considered effective, the following goals would have to be met: electronic data exchange between customs offices for all customs procedures has been established; that the economic entity can submit its electronic declarations from its premises; that customs control is performed on the basis of risk analysis on the basis of criteria that are exchanged; economic subjects have access to the information customs system through a unique electronic access point; all computerized customs systems must be based on an integrated architecture (TARIC, NCTS, etc.).

NCTS is a system spread across Europe based on electronic declaration and data processing, intended to ensure better management and control of common and intra-Community transit. This system uses applications for the exchange of messages between customs and business entities. Its use today is also a condition for membership in the European Community for all countries that intend to join the community. The national administration of each country should develop its own NCTS structure, in accordance with the architecture defined in the headquarters, which will be connected to all other countries through the central domain in Brussels. Based on the use of an advanced computer system and electronic data processing, it guarantees more modern and efficient management than paper documentation with its proven shortcomings. With the introduction of NCTS, the electronic data record becomes the only legally correct evidence, unlike the previous composition where it was a paper declaration.

Conclusion

Modern information and communication solutions are necessary for the finalization of a logistics undertaking, ie for the successful completion of a forwarding job. There is pressure on all participants in the transport cycle to optimize their operations in order to overcome existing problems such as delays in the delivery of goods. In order to achieve the maximum result, it is necessary to apply information and communication solutions in all phases of business. Information and communication solutions encountered obstacles in this economic branch due to non-standardized data of numerous small, medium and large companies. The most effective software tools are TMS transport management systems that provide many benefits to users by enabling companies to manage all business segments from potential client inquiries; making an offer based on the analysis of previous business; planning and organization of transport with own vehicles or contracting; monitoring financial effects in real time. As one of the most important tools that will raise the entire transportation role to a higher level, "Intelligent Transportation Systems" (ITS - "Intelligent Transportation System") are used. Solutions such as ERP, WMS, NCTS, etc. are a step higher and represent a necessity in the forwarding business, with the application of which forwarding companies will achieve real progress through real-time communication, but also huge savings through the physical distribution of goods.

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LEADERSHIP PROFILE OF CROATIAN PROJECT MANAGERS - INVESTIGATING THE EFFECTS OF STRESS AND FOLLOWERS' EXPERTISE IN ACHIEVING PROJECT SUCCESS

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Abstract

In contemporary business environment projects and project work are highly important and inevitable aspect of organizational functioning and success, which is a result of decades of 'projectification' of organizational work. Projects, as dynamic and unique endeavours, with strict limitations, high expectations and clear responsibilities for individuals, are a highly stressful work environment for project management professionals, especially for persons ultimately responsible for the success of projects - project managers. In order to successfully manage a project, the project manager needs to possess and utilize required project management skills, upgraded with leadership qualities and capabilities, and accompanying project management experience. Although, the contributions of academics, practitioners and professional associations to the relevant project management literature are immense, the role of stress in managing projects, especially in relation to demonstrated project management leadership, and followers' characteristics, is still an area of research that lacks contributions. This especially applies to research and contributions from moderately or less developed countries, such as those in Central and South East Europe. In order to fill this research gap, this paper seeks to explore the role of stress in demonstrating adequate project management leadership and ultimately achieving project success. As the most important context factor, the role of followers' expertise in achieving project success is also investigated in the paper. Following theoretical foundations, a conceptual moderation model was designed and operationalized. The empirical research was conducted during 2021 on the population of project managers in Republic of Croatia, resulting in final research sample of 71 Croatian project managers. Collected data were processed with *SPSS Statistics 23.0*, whereas *PROCES macro v4.0 for SPSS* was used for moderation analysis. Obtained results indicate that demonstrated project management leadership and followers' expertise have positive effects on the success of the project. According to the results, stress, due to its U-shape effect nature, does not affect the project success, whereas it has a negative moderation effect on demonstrated project management leadership by reducing its positive effects on the project success. In addition to these results, the paper offers other interesting insights into the relationships between demonstrated project leadership, project management stress, and project success, further filling the identified research gap.

Keywords: project management, leadership, stress, project success, moderation analysis

JEL classification: J24, L20, M10

SECTORAL DIFFERENCES IN THE PARADOX OF GENDER JOB SATISFACTION IN SERBIA

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Abstract:

This study investigates gender differences in job satisfaction of employees in the public and private sectors in Serbia. Despite extensive evidence that women have lower wages, worse working conditions and fewer opportunities for advancement, female workers often have equal or higher levels of job satisfaction than men, which is recognized as the gender-job satisfaction paradox. The main goal of the research is to examine and prove the existence and scope of the gender-job satisfaction paradox among employees in different sectors in Serbia. The starting point of this research is the assumption that employed women are on average more satisfied than men, despite the inferior position they occupy on the labor market and regardless of the sector in which they are employed. The survey was conducted among 268 employees in six private companies and one state-owned enterprise. The structured questionnaire was used and distributed during January 2022. The first part of the questionnaire refers to the respondents' demographic information, while the second part of the questionnaire referred to questions related to job satisfaction in accordance with the Job Satisfaction Questionnaire which measured the degree of satisfaction with aspects of the job. The research results obtained using factor analysis show that women are generally more dissatisfied with all aspects of job compared to men, and that the difference in satisfaction with all aspects of job between women and men is statistically very significant. The finding that women are, on average, more dissatisfied with their jobs than men seems to contradict most studies that report that women are more satisfied with their jobs than men. However, the results of job satisfaction in relation to the sectoral structure show that women in the public sector are on average more dissatisfied with all aspects of job compared to male counterparts. In other words, women in the private sector are on average more satisfied with all aspects of job compared to men, with the exception of job security and working hours. Accordingly, the idea of the gender-job satisfaction paradox in conditions of high levels of gender inequality that characterizes the labor market in Serbia can be confirmed exclusively for women employed in the private sector. The paper adds to existing knowledge on the job-gender paradox. Evidence that there are differences in job satisfaction between female and male employees suggests that gender differences are still gaining importance.

Keywords: Job satisfaction, satisfaction with aspects of job, gender, gender-job satisfaction paradox, labour market

JEL Classification: J28, J14, J16.

Introduction

Despite the fact that employed women have worse conditions on the labor market, they often show the same or higher level of job satisfaction than men ([Perugini, Vladislavljević, 2019, p. 133](#); [Clark, 1997](#); [Sousa-Poza, Souza-Poza, 2003](#); [Kaiser, 2007](#)). This phenomenon is known in the literature as the paradox of gender-job satisfaction. The aim of this paper is to provide empirical evidence on the viability of the idea of the paradox of gender-job satisfaction depending on whether employees work in the public or private sector. The results of this research show that women are less satisfied with all aspects of job than men, and that the difference in job satisfaction between women and men is statistically very significant. It has been shown that women employed in the public sector are more dissatisfied with all aspects of job compared to men, but also more dissatisfied than women working in the private sector. On the other hand, women from the private sector are more satisfied with certain aspects of job and compared to men, except for job security and working hours.

This paper adds to existing knowledge on this topic by: (i) providing evidence of the existence of the paradox of gender-job satisfaction in the private sector; (ii) the differences in satisfaction with job security and working hours between women and men are not the result of different positions on the labor market, but are a consequence of the fear of employed women of losing their jobs and financial resources, as well as the need to balance work and private life, bearing in mind their still traditional role in Serbian society when it comes to caring for children and other family members.

The paradox in gender-job satisfaction

Job satisfaction talk to the emotions of employees to job and varied aspects of job. Simply put, „job satisfaction is extent to which people like (satisfaction) or dislike (dissatisfaction) their jobs“ ([Spector, 1997, p. 2](#)). Job satisfaction is „an affective (that is, emotional) reaction to one’s job, resulting from the incumbent’s comparison of actual outcomes with those that are desired (expected, deserved, and so on).“ ([Cranny et al., 1992, p. 1](#)). Very similar to them, Locke defines job satisfaction a “pleasurable or positive emotional state resulting from an appraisal of one’s job or job experiences” ([Locke, 1976, p. 1300](#)).

Among the reasons for the growing interest in the study of job satisfaction is its impact on employee performance ([Appelbaum, Kamal, 2001](#); [Judge et al., 2001](#); [Tietjen, Myer, 1998](#)), absenteeism ([Hausknecht et al., 2008](#)), turnover ([Hom, Griffeth, 1995](#)). For this reason, numerous studies have appeared trying to identify the determinants of job satisfaction.

[Clark \(1997, p. 343\)](#) points out three strong reasons why job satisfaction is one of the most frequently studied phenomena in the field of organizational behavior. First, in addition to marital and family satisfaction, job satisfaction is the strongest predictor of overall well-being. Second, job satisfaction is related to behavior and third, it depends on how likely it is that "employees will reach a surrogate measure of utility at work."

One of the issues in the field of job satisfaction that has attracted the greatest interest is the existence of differences between men and women. Although there is no consensus on this topic in the literature, especially when it comes to international comparisons, a large number of studies indicate greater satisfaction of employed women compared to their male colleagues ([Clark, 1997](#); [Sloane, Williams, 2000](#); [Long, 2005](#); [Sousa-Poza and Sousa-Poza, 2000](#)). Women are more satisfied with their jobs compared to their male colleagues despite their inferior position in the labor market, in terms of segregation of jobs and wages ([Duncan, Corcoran, 1984](#)). In economic literature, this outcome is known as the paradox of the satisfied worker ([Crosby, 1982](#)).

[Hodson \(1989\)](#) outlined several possible explanations for the gender differences he observed in the United States in the 1960s and 1970s. First, the same job characteristics are valued differently by men and women. Second, women emphasized their role as "housewives" over paid work. Finally, women were more satisfied with their jobs compared to other women or men because they had lower job expectations. This last explanation has been the focus of a large number of papers in the last 20 years.

In his work, [Clark \(1997\)](#) discussed potential reasons for existing gender differences in job satisfaction. The gap in gender- job satisfaction cannot be fully explained by differences in individual characteristics, job characteristics, job values, relative distribution of income and selection bias, but the higher satisfaction of women may be a consequence of lower job expectations resulting from "a worse position on the labor market that women had in the past" ([Clark, 1997, p. 342](#)). The job satisfaction gap will disappear when more women do better jobs or are exposed to environments where they can overcome their gender beliefs, resulting in increased job expectations.

Unlike him, [Sloane and Williams \(2000\)](#) believe that women's job satisfaction would decrease if they were faced with similar job characteristics as men, which means that the gap in gender satisfaction refers to the sorting of certain jobs based on different preferences. [Sousa-Poza and Souza-Poza \(2000\)](#) believe that in countries where there is a higher level of work performance for women, there is also a higher level of job satisfaction among women compared to men. "This is particularly true for women in the UK, who have much more than men (self-awareness) of job security, jobs that are useful to society, that help other people, and good relationships with management and colleagues" ([Sousa-Poza, Souza-Poza, 2000, p.149](#)).

[Perugini and Vladisavljević \(2019\)](#) prove that women in Europe are on average more satisfied with their jobs than men. The reduction of gender differences in job satisfaction is noticeable in women with low and secondary education who in the early stages grew up in environments with higher gender equality due to which they developed higher expectations from work similar to men. Similarly, women who lived in less equal communities show higher job satisfaction than men because not only have they developed lower expectations due to less labor market participation, but they may have been "socialized" to place more value on aspects of work such as flexibility and social connections" ([Perugini & Vladisavljević, 2019, p.139](#)).

Despite the large number of studies focusing on gender differences in job satisfaction, very few analyze the different patterns of job satisfaction for men and women in the public and private sectors. Economic literature agrees that there are significant differences in both sectors, among other things in terms of wages, advancement, working hours, etc. ([Fotler, 1981](#); [Meyer, 1982](#); [Perry, Porter, 1982](#)). Since gender preferences are different for each of these items, these differences could also cause differences in job satisfaction between men and women in the public and private sectors.

On the other hand, working conditions in the public sector are more uniform among workers of the same professional category. In the private sector, contracts are negotiated in a more discretionary and individualized manner, which could lead to greater differentiation among workers. In fact, if we focus on the participation of women in managerial positions, which is a quarter ([Babović, 2015](#)) and the wage gap between men and women, we could conclude that the working conditions of the latter are on average worse than men, at least in the private sector. This could explain why, as the data show, more and more women are working in the public sector (Table 1). For example, according to the data of the [Statistical Office of the Republic of Serbia \(2014\)](#), although 49% of the total number of employed women worked in the state sector, and 50% in private property, the participation of employed women in the total number of employees in the state sector (48%) was smaller compared to the participation of men (52%). Compared to 2018 ([Statistical Office of the Republic of Serbia, 2020](#)), of the total number of employed women

in Serbia, 39% work in the public sector, while 60.3% are employed in the private sector. Of the total number of employees in the public sector, the participation of women (53%) is 8 percentage points higher than men (47%), in contrast to the private sector, where the number of employed women is lower by 12 percentage points (registered private ownership), that is, 6% in private ownership is not registered.

Table 12 Employed by type of ownership and gender (in thousands and %)

2019.						
Employees / ownership	Women		Men		Structure by gender	
	number	%	number	%	women	men
Private ownership registered	581	59,1	744	66,7	44	56
Private ownership not registered	11	1,2	13	1,2	47	53
State ownership	383	39,0	345	30,9	53	47
Other	7	0,7	13	1,2	35	65

2016.						
Employees / ownership	Women		Men		Structure by gender	
	number	%	number	%	women	men
Private ownership registered	474	54,7	607	61,3	43,8	56,2
Private ownership not registered	11	1,2	18	1,8	37,3	62,7
State ownership	374	43,1	352	35,5	51,5	48,5
Other	8	1,0	14	1,4	37,4	62,6

2013.						
Employees / ownership	Women		Men		Structure by gender	
	number	%	number	%	women	men
Private ownership registered	341	49	460	54	43	57
Private ownership not registered	6	1	15	2	29	71
State ownership	346	49	368	43	48	52
Other	6	1	15	2	31	69

Source: Statistical Office of the Republic of Serbia

Finally, working hours, the schedule, the lower required mobility and the greater stability could facilitate in the public sector the conciliation of work and personal life, especially in the case of having members of the family dependent. Given that women have traditionally been responsible for care job, this fact could explain, once again, their greater presence in the public sector and their bigger job satisfaction (see [Konrad et al., 2000](#); [Pinquart, Söresen, 2000](#); [Sloane, Williams, 2000](#)).

In accordance with the above, the authors of study ([Fernández, Sánchez, 2020](#)) examined the differences in job satisfaction between men and women in the public and private sectors. Differences in satisfaction were analyzed globally, and then according to different domains of satisfaction: salary, social assistance, training, job stability, working hours, flexibility, organization at work, independence, evaluation of work by superiors, monotony and stress. The results show that women are more satisfied than men overall. However, their greater satisfaction

is justified exclusively by workers in the public sector. Exclusively in the public sector, the differences between men and women do not disappear. More women in the public sector are still satisfied than men.

Having all this in mind, the goal of this research is to contribute to the literature of the gender-work paradox, proving that the existence and scope of the paradox can be a result of the sectoral structure. For this purpose, we use data from respondents' answers in combination with various indicators of gender differences in the labor market in Serbia.

The position of women on the labor market in Serbia

The gender gap in the labor market in Serbia persists despite the attention given to this problem in national strategies in the field of employment and gender equality. Women have continuously and consistently a lower rate of activity and employment than men and a higher rate of inactivity. According to the data from the Labor Force Survey ([Statistical Office of the Republic of Serbia, 2020](#)), the women employment rate is 41,9%, which is 14,7 percentage points less than the men employment rate (56,6%). When it comes to employment, the largest gender gap in the labor market is recorded among persons aged 55-64, where the employment rate of women is 40.5%, and the employment rate of men is 60.8%. The employment rate of women under the age of 55 is 10.8 percentage points lower than the employment rate of men of the same age (69.1% vs. 79.9%, respectively) ([Statistical Office of the Republic of Serbia, 2020a, p. 70](#)). The inactivity rate of women is 15.6 percentage points higher than the inactivity rate of men (52.9% and 37.3% respectively). The largest gender gap in terms of inactivity on the labor market was recorded in the age category of 55 years and older, where the rate of inactivity of women is 78.4%, in contrast to the rate of inactivity of men, which is lower and amounts to 61.6%. ([Statistical Office of the Republic of Serbia, 2020a, p.70](#))

Some groups of women face particularly high barriers to employment. In 2017, among young women (15-24), the unemployment rate was 36% (compared to 29% of young men ([Statistical Office of the Republic of Serbia, 2017, p. 6-17](#))). Due to the still prevailing patriarchal culture that assigns women primarily roles in the family and household, women are much more quickly discouraged from finding employment and withdraw from the labor market into inactivity. Among inactive people who are not looking for work because they have lost hope of finding one, 62% are women, while among those who are not looking for work because they are looking after children or adult family members who need care, 97% are women ([Statistical Office of the Republic of Serbia, 2017, p. 77](#)).

The participation of women among entrepreneurs increased slightly (from 26% in 2011 to 34% in 2017). However, the majority of women's entrepreneurship is driven by the necessity to find employment on their own in the face of obstacles in the labor market, and not because of business ideas and good business resources (knowledge, information, connections), which reduces the chance for women's businesses to become sustainable and successful ([Babović, 2011](#)).

The gender gap in earnings persists, although it is not as high as in some other countries. The difference between the average salary of men and women has been continuously growing since the beginning of 2000 ([Secons, 2015](#)). Although the total wage gap is not high (8.7%), it is higher in the public sector and in some industries (manufacturing 18.6%, information and communication 14.9%, finance and insurance 12.9%, health and social care 12.6%). According to the data from the Labor Force Survey ([Statistical Office of the Republic of Serbia, 2020a, p. 93](#)), in 2018, the pay gap between women and men in the private sector is 10.1%, and the participation of employed women with low wages in the total number of employees in the same sector is 25.3%, compared to men whose participation is 23.3%. The wage gap between women and men in the public sector amounts to 11.6%, and the participation of employed women with

low wages in the total number of employees in the same sector is 10.1%, compared to men whose participation is 6.6%.

The participation of women with the lowest wages in relation to all women performing paid work is higher than the participation of lowest paid men in relation to all men performing paid work (24.4% versus 21.6%).

Methodology

Based on [Clark's \(1997\)](#) study and subsequent research on this topic, we expect that women will generally be more satisfied with all aspects of work compared to men. We believe that this should especially apply to women employed in the public sector, not only because of the unfavorable position that women generally occupy in the Serbian labor market, but also because in recent years there has been a noticeable increase in the participation of employed women in the total number of employees in public services.

In accordance with the goal, a research was conducted among employees in six privately owned IT and publishing companies and one state-owned company (The Pension and Disability Insurance Fund of the Republic of Serbia). A structured questionnaire was used and distributed during January 2021 to 300 addresses (via e-mail). The survey completion rate is 89,3%. The questionnaire has two parts. The first part contained demographic issues related to gender, education, age structure, sectoral structure of the company in which they are employed, management positions and years of work experience.

The second part of the questionnaire contained 8 closed-ended questions in accordance with the Job Satisfaction Questionnaire ([Clark, 1997](#)), which measured the degree of satisfaction with several aspects of job, including general satisfaction with current job. Respondents were asked to evaluate their levels of satisfaction with seven dimensions of their job: prospects of promotion, total salary, relationship with supervisors, job security, self-initiative in work, the actual work itself and working hours. The task of the respondents is to assess on a five-point Likert-type scale the extent to which they agree with the stated statements (from 1 = not satisfied at all to 5 = completely satisfied).

The survey was conducted on a sample of 268 employees, of which the number of women respondents was 196 (73,1%) and man 72 (26,9%). Much greater involvement of women in the survey could be explained by the nature of the activities of the companies from which the respondents come, taking into account that more than 40,000 employed women compared to men work in state-owned enterprises in Serbia ([Statistical Office of the Republic of Serbia, 2020a](#)), as well as that 80% of respondents are employed in the same sector. Second, it is more likely that women were more willing to complete the survey than men. The average age of the respondents is 45 years with an average the number of years of work experience of 14. Only 9% of respondents are in management positions, while slightly less than half (46,3%) have higher education.

Data were analyzed using factor analysis. All analyzes in the research were performed using the software package SPSS for Windows, version 21.

Results

Previous research shows that women are not less satisfied with their jobs than men, but are even more satisfied regardless of their inferior position on the labor market. The results of this research in terms of average ratings of satisfaction with different aspects of work are shown separately for women and men in table 2.

Table 13: Gender differences in satisfaction with different aspects of the job

	Women		Men	
	Mean	Std. Deviation	Mean	Std. Deviation
Promotion prospects	3.80	0.455	3.95	0.768
Total pay	3.40	0.864	3.63	0.900
Relations with supervisors	3.33	1.004	3,60	0.849
Job security	3.30	1.049	3.70	0.751
Initiative	3.36	0.877	3.57	0.942
Actual work itself	3.59	0.844	3.78	0.809
Hours	2.95	0.976	3.37	0.968

Source: Author's research

The results of the descriptive statistics presented in the previous table show that the mean values of satisfaction with all aspects of job are higher for men than for women. Therefore, unlike previous research, our data show that women are less satisfied with their jobs than men, and that the difference in satisfaction with different aspects of the job between women and men is statistically very significant (Table 3).

Table 14: Gender differences in satisfaction with different aspects of the job

	Mean Women	Std. Deviation	Mean Men	Std. Deviation	Sig.	Partial Eta Squared
Prospects of promotion	3.80	0.455	3.95	0.768	0.009	0.014
Total salary	3.40	0.864	3.63	0.900	0.011	0.014
Relations with supervisors	3.33	1.004	3.60	0.849	0.008	0.015
Job security	3,30	1.049	3.70	0.751	0.000	0.032
Initiative	3,36	0.877	3.57	0.942	0.022	0.011
Actual work itself	3.59	0.844	3.78	0.809	0.032	0.010
Hours	2.95	0.976	3.37	0.968	0.000	0.035

Source: Author's research

The results are inconsistent with the findings of a study that found empirical evidence of higher job satisfaction among women in many Eastern European countries, including Serbia ([Pita, Torregrosa, 2021](#)). The obtained results refute the claim that the expectations of adult women in environments with greater gender equality are in line with the expectations of their male colleagues ([Perugini, Vladisavljević, 2019](#)). The findings of this study confirm the authors' conclusion ([Green et al., 2018](#)) that the gap in job satisfaction reflects a strong decrease in job satisfaction among women, which is a product of their increasingly in-depth analysis of job characteristics. However, from the aspect of sectoral structure, the results shown in table 4 show, to our surprise, that women in the public sector are more dissatisfied than their male colleagues, and are even more dissatisfied than women employed in the private sector. This result is not in accordance with the research findings ([Fernández, Sánchez, 2020](#)) which states that women in the public sector are generally more satisfied with their jobs than men. The results are also not in accordance with the research findings ([Mihajlov, Mihajlov, Perić 2021](#)), that is, that female and male respondents are on average equally satisfied with the work they do. The reasons for such results should be sought in the increasing gender similarity in terms of job

expectations, especially in the public sector, where women in Serbia are increasingly employed. We are of the opinion that the significant efforts of state institutions and independent state bodies in order to create a legal and institutional framework for promoting, affirming and achieving gender equality and protection against discrimination in the labor market, especially in the direction of apostrophizing the economic role of women in Serbian society, contributed to this. Although the legislation in Serbia has been significantly improved, discrimination against women in the labor market, both during employment and at the workplace, is quite widespread, as indicated by the data presented in this paper. Higher expectations from work with an inferior position in the labor market, which is based on gender stereotypes and expectations set by society, has a negative impact on women's satisfaction. It is possible that, as Clark also says ([Clark, 1997, p. 342](#)), the gap in job satisfaction disappears when more women do better jobs or are exposed to environments where they can overcome their gender beliefs, which will result in increased job expectations.

Table 15: Gender- sector differences in satisfaction with different aspects of the job

	public		private	
	Mean	Std. Deviation	Mean	Std. Deviation
Women				
Promotion prospects	3.77	0.483	3.93	0.252
Total pay	3.40	0.860	3.40	0.887
Relations with supervisors	3.29	1.037	3.53	0.812
Job security	3.27	1.086	3.43	0.851
Initiative	3.27	0.908	3.77	0.563
Actual work itself	3.55	0.880	3.77	0.621
Hours	2.89	1.003	3.20	0.798
Men				
Promotion prospects	4.17	0.534	3.52	0.969
Total pay	3.81	0.828	3.29	0.944
Relations with supervisors	3.67	0.948	3.48	0.594
Job security	3.79	0.777	3.52	0.671
Initiative	3,81	0.736	3.10	1.122
Actual work itself	3.79	0.746	3.76	0.932
Hours	3.43	0.985	3.24	0.932

Source: Author's research

On the other hand, in the private sector, women are on average more satisfied than men in all aspects of job, with the exception of job security and working hours. In the mentioned job dimensions, significant statistical differences were observed between women and men (Table 5, 6).

Table 16: Gender- sector differences in job security satisfaction

Gender	Sector	Mean	Std. Deviation	Sig.	Partial Eta Squared
women	public	3.43	1.086		
	private	3.07	0.851		
men	public	3.79	0.777		
	private	3.22	0.671		
Gender * Sector				0.046	0.007

Source: Author's research

Table 17: Gender – sector differences in hours satisfaction

Gender	Sector	Mean	Std. Deviation	Sig.	Partial Eta Squared
women	public	3.20	1.003		
	private	2.89	0.798		
men	public	3.43	0.985		
	private	3.24	0.932		
Gender * Sector				0.031	0.010

Source: Author's research

The results show that women from the private sector ($M=3.43$, $SD=0.851$), unlike their male counterparts ($M=3.52$, $SD=0.671$), are more dissatisfied with job security. The explanation for the results can be found in the fact that employees in the private sector are mostly employed for a fixed period of time or their survival depends on the achieved work results. A number of authors prove that employees experience a higher level of affective job insecurity if they work on fixed-term contracts ([Kirves et al., 2011](#); [Keim et al., 2014](#)). According to the theory of socio-psychological stress ([Lazarus, Folkman, 1984](#)), employees with fixed-term contracts, unlike permanent employees, have a feeling of uncertainty regarding the future of their employment, because they cannot be sure whether their employment contract will be extended or they will have to find a new job. Anticipating the loss of work and financial resources resulting from fixed-term contracts can cause stress and dissatisfaction among employees. These findings are consistent with a study ([Morgenrot et al., 2021](#)) that concludes that temporary employment fosters affective job insecurity, which is why temporary employed women are more dissatisfied with their jobs than men.

Also, the results show that women from the private sector ($M=3.20$, $SD=0.798$), unlike their male colleagues ($M=3.24$, $SD=0.932$), are more dissatisfied with working hours. Dissatisfaction with working hours can be understood as the inability of women to establish a balance between work and private life, bearing in mind the still present gender stereotypes regarding the roles of women and men in the family and society. The issue of coordinating business and private life is closely related to the issue of gender equality. We cannot deal with one without the other. As soon as they start looking for opportunities to increase the percentage of women in management positions and balance the gender structure in the company, a problem arises due to the fact that women take care of dependents and the household, they cannot stay longer at work in the same way as their male counterparts.

Discussion

The primary goal of this paper was to examine the paradox of gender job satisfaction among employees in the public and private sectors in Serbia. It started from the assumption that employed women, despite their inferior position on the labor market, are on average more satisfied than men. In the literature, the reasons for women's higher satisfaction are mostly explained by lower expectations from work compared to men ([Clark, 1997](#); [Perugini, Vladisavljevic, 2019](#)). The second objective of the work refers to confirming the assumption that women employed in the public sector are more satisfied with aspects of job compared to men, among other things, due to the increasing participation of women in the total number of employees in public services.

However, the results of our research show that, on average, women are more dissatisfied with all aspects of job compared to their male colleagues, and that the differences in satisfaction with all aspects of job between women and men are statistically very significant. At first glance, our

conclusion that women are on average more dissatisfied with their jobs than men is not in line with numerous studies that highlight higher job satisfaction in women than in men ([Clark, 1997](#); [Perugini, Vladislavljević, 2019](#); [Sloane & Williams, 2000](#); [Sousa –Poza, Sousa-Poza, 2003](#)), but it is consistent when the sectoral structure is included in the research. Under these conditions, the conclusion is that women in the private sector are on average more satisfied with aspects of job compared to men. Therefore, the idea of the paradox of gender-job satisfaction in conditions of a high level of gender inequality that characterizes the labor market in Serbia can be confirmed and accepted as a universal phenomenon exclusively in the private sector.

Another important finding in this study is that men and women do not seem to be equally affected by job security and working hours. A possible explanation for the fact that women working in the private sector are on average more dissatisfied with these aspects of work stems from the fear of losing work and financial resources, as well as the need to balance work and private life. Unlike men, women in Serbia still carry a greater burden when it comes to taking care of children and other family members, and it is simply impossible to fully harmonize them with professional obligations. Research on the use of time from 2010 and 2015 in Serbia ([Statistical Office of the Republic of Serbia, 2020a, p.106](#)) confirmed the stereotypes that apply in our region. „Regardless of whether they are employed or not, women, compared to men, spend twice as much time working at home and half as much time in paid work. For working women, housework becomes a second shift. Data show that men work almost twice as long as women in paid jobs, both on weekdays and on weekends. On the other hand, as expected, women work in unpaid jobs longer than men, both on weekdays and on weekends. Women who are married and have a child under the age of seven spend the most time in unpaid work — almost the entire work shift.“

Limitations in the research come from several sources. First of all, the sample is insufficiently representative, bearing in mind that twice as many women as men participated in it. Also, the type of activity, size and ownership structure of the company prevents the generalization of results. The survey lacks respondents from other public companies, privatized state-owned companies and multinational companies operating in Serbia, as well as companies in other types of activities, especially manufacturing.

Second, given that all data were collected from the same sources in the same time period through the respondents' self-assessment, there is a possibility of a bias effect. Respondents may distort the results by trying to maintain consistency in their answers or to present themselves in the best light regardless of their true feelings. Job satisfaction is an extremely subjective question, which is why people's feelings can often change.

Conclusion

Employed women in Serbia are on average more dissatisfied with all aspects of work compared to their male colleagues, which is why we cannot talk about paradox of gender-job satisfaction despite the inferior position of women on the labor market. However, the paradox of satisfied workers is only justified by women employed in the private sector, in contrast to female workers in the public sector, who are on average more dissatisfied with all aspects of their work compared to men. However, regardless of the area of the economy in which they are employed, compared to men, women in Serbia are the least satisfied with job security and working hours.

Although gender equality represents real equal opportunities for men and women to fully use their educational and work potential on the one hand and to focus equally on family obligations on the other hand, the excessive participation of women in unpaid work and the excessive participation of men in paid work does not bring full satisfaction with neither, while society loses an important potential. This is also supported by research in which the double burden of women, which comes from paid and unpaid work, is not fulfilling and that the active involvement of men in household

chores is closely related to how satisfied a woman is with her relationship with a man, general well-being and happiness (Scott, Plagnol, 2012). It is estimated that in Europe the losses of GDP per capita attributable to differences between men and women in the market are up to 10% (Ždanoka, Blinkevičiūtė, 2016). The fact that the greater participation of men in unpaid work and the greater participation of women in the labor market is of crucial importance for equalizing the disproportion is a logical consequence of the fact that there are only 24 hours in a day and that every family life brings numerous obligations in the household and caring for other people. In accordance with the above, it is necessary to raise the awareness of employers that employees must establish a balance between professional and personal obligations and look positively at the introduction of news into the working environment, taking into account all aspects of the employee's life, regardless of gender.

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HOW WELL DO PURCHASE PRICES OF AGRICULTURAL PRODUCTS DETERMINE THEIR SELLING PRICES?

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Abstract

Prices of agricultural products are important indicators of the stability of the food markets, and provide inputs for evidence-based decision-making in many economic activities. Determining the factors that have a significant influence on the selling prices of agricultural products and their movements helps make timely and accurate decisions, and develop appropriate strategies.

This article aims to examine whether the average purchase prices of agricultural products (the price at which the products are purchased from the agricultural producers) can be used to determine the average selling prices of the products (the price at which they are later sold on the food markets), using the evidence from the Republic of Srpska.

A group of 10 different agricultural products is selected and included in the analysis. For each type of product, data about the average purchase and selling prices are collected for the period from 2011 until 2020, forming the panel data for further analysis. The average purchase price is used as a predictor and the selling price as a dependent variable.

The most suitable econometric model is selected based on the results of the Hausman specification test, as well as considering the results rendered by different models. Upon the selection of the most appropriate econometric model, the calculated regression and determination coefficients are interpreted, and the validity of the model is discussed. Additional tests are conducted to examine the properties of the model, namely the heteroscedasticity, stationarity, and autocorrelation tests.

The results indicate that, despite statistically significant regression coefficients and a high value of the determination coefficient, the model exhibits certain unwanted properties that put in question its validity and reliability, meaning that it would not be appropriate to model the selling prices of agricultural products on the food markets based on their average purchase prices using the nominal level of prices.

Keywords: agriculture, purchase prices, selling prices, panel data

JEL classification: Q11

1. Introduction

A good and stable foundation is crucial for ensuring a strong and lasting construction. No matter how well-designed and reliable the building is, it will inevitably collapse if its foundations are flawed and not properly taken care of.

The same applies to the economy of any country. In order to successfully implement any type of economic policy, the foundations of the economy must be firm and reliable. And what is a core of an economy? The answer is simple – its people. Countries and their economies are social creations, with the main purpose of providing a safe and structured environment for their

inhabitants. Authors Hart, Laville, and Cattani suggest that, in order to be human, an economy must be made and remade by people, and address everyone's needs and interests (Hart, Laville, & Cattani, 2010). Therefore, the base of an economy is the people, and the results of all economic actions are dependent on them.

Having stable economic foundations, therefore, means having an environment in which people feel safe and content. Maslow indicates that basic human needs must be fulfilled before addressing more complex issues. These include elementary physiological needs, such as air, water, food, and sleep (Maslow, 1943).

Only when the fundamental needs are met, can an individual work on providing for tomorrow, and function on a high enough level to consider more complex desires and aesthetics (Satter, 2007). Thus, fulfilling people's basic needs is a prerequisite for the implementation of any successful economic action, and policymakers should always prioritise it. It is crucial to keep an eye on the living standard of the population, and that includes understanding what factors influence the prices of basic commodities.

Agricultural products are the commodities that ensure that the basic needs of the people are satisfied, i.e. needs for food and nutrition. As the demand for food is found to be price inelastic (Andreyeva, Long, & Brownell, 2010), the changes in prices of food and agricultural products could have a significant influence on the purchasing power of the population. The prices are also an input for many socioeconomic models and econometric modeling, as well as determining price elasticities (Eurostat, 2022).

Consequently, it is of utter importance to determine the factors that have a significant influence on the selling prices of agricultural products in order to be able to implement timely and appropriate measures and policies, and for better forecasting.

This article aims to examine whether the average purchase prices of agricultural products can be used to determine the average selling prices of the products, using evidence from the Republic of Srpska. The main hypothesis is that average selling prices have a statistically significant influence on the level of the selling prices of agricultural products. In order to test the hypothesis, data about the average purchase and selling prices of 10 different agricultural products in the Republic of Srpska are collected, for the period from 2011 until 2020. All the prices are expressed in BAM, and all the calculations are performed in the statistical software package Stata, with the output tables given in the article.

2. Data Collection and Methodology

The first step in the analysis is to collect the data about the purchase and selling prices of agricultural products. The principal source of data is the Statistical Yearbook of the Republic of Srpska for 2021, Agriculture and Forestry part.

The selling prices of agricultural products are the prices at which the products are sold on the food markets, while the purchase prices are the prices at which the products are purchased from the agricultural producers, per unit of measurement (Institute of Statistics, 2021). The average selling prices at green markets in BAM per unit are given directly in the Statistical Yearbook, so they can be used in the calculations as such, without any transformation. The units used are kilograms (kg), litres (l), and pieces.

Purchase prices per unit of measurement, however, are not given explicitly in the publication, so they need to be calculated from the available data, in order to be comparable to the selling prices. The Statistical Yearbook gives the total purchase value of selected agricultural products in BAM for the period from 2011 until 2020, as well as the total purchased quantity of the products in tonnes and thousands of units. The quantity is firstly transformed in the units used for expressing the unit selling prices (kg, l, and units), and then the total value of purchased

agricultural products in BAM is divided by the quantity to obtain the purchase price per unit of product. In this way, the purchase and selling prices are expressed using the same measurements, making them comparable.

With the purchase and selling prices calculated, the next step is to connect the two groups, as they do not consist of the same products. A group of products is selected for the analysis in a way that only identical products that appear in both groups are taken into consideration, to avoid any mismatch mistakes. The result is 10 comparable products for the analysis. The collected and transformed data are given in Table 1, and they are used as inputs in all further calculations in this paper.

Table 1. Purchase and Selling Prices of Selected Agricultural Products in BAM

Part 1

	Unit	Price	2011	2012	2013	2014	2015
Wheat	kg	Purchase	0,393	0,416	0,350	0,373	0,349
Wheat	kg	Selling	0,560	0,500	0,540	0,480	0,450
Corn (grain)	kg	Purchase	0,378	0,410	0,398	0,332	0,318
Corn (grain)	kg	Selling	0,500	0,550	0,560	0,450	0,420
Potato	kg	Purchase	0,623	0,489	0,592	0,419	0,417
Potato	kg	Selling	0,890	0,750	0,840	0,650	0,620
Pepper	kg	Purchase	0,503	0,513	0,701	0,757	0,802
Pepper	kg	Selling	1,690	1,570	1,640	1,450	1,420
Cucumber	kg	Purchase	0,964	0,759	0,827	0,853	0,779
Cucumber	kg	Selling	1,350	1,310	1,550	1,530	1,200
Pear	kg	Purchase	0,868	0,758	0,683	0,883	1,154
Pear	kg	Selling	1,920	1,870	1,460	1,600	1,670
Plum	kg	Purchase	0,405	0,508	0,374	0,583	0,442
Plum	kg	Selling	1,120	1,250	0,800	1,220	1,090
Eggs	piece	Purchase	0,153	0,173	0,143	0,145	0,125
Eggs	piece	Selling	0,240	0,280	0,240	0,260	0,240
Milk (cow)	l	Purchase	0,567	0,599	0,601	0,600	0,579
Milk (cow)	l	Selling	1,170	1,170	1,250	1,200	1,140
Honey	kg	Purchase	8,162	9,469	9,000	9,522	8,396
Honey	kg	Selling	11,460	11,670	12,210	12,490	13,100

Part 2

	Unit	Price	2016	2017	2018	2019	2020
Wheat	kg	Purchase	0,323	0,313	0,269	0,298	0,315
Wheat	kg	Selling	0,520	0,470	0,468	0,480	0,550
Corn (grain)	kg	Purchase	0,289	0,307	0,283	0,281	0,296
Corn (grain)	kg	Selling	0,460	0,450	0,450	0,470	0,469
Potato	kg	Purchase	0,334	0,313	0,443	0,453	0,327
Potato	kg	Selling	0,550	0,590	0,786	0,930	0,861
Pepper	kg	Purchase	0,756	0,667	0,751	0,779	0,719
Pepper	kg	Selling	1,200	1,260	1,852	2,190	1,984

Cucumber	kg	Purchase	0,854	0,973	0,914	0,150	0,208
Cucumber	kg	Selling	1,160	1,240	1,464	1,660	1,568
Pear	kg	Purchase	1,176	0,913	0,536	0,596	0,475
Pear	kg	Selling	1,480	1,800	2,083	2,330	2,393
Plum	kg	Purchase	0,548	0,746	0,474	1,019	0,885
Plum	kg	Selling	1,120	1,340	1,124	1,380	1,432
Eggs	piece	Purchase	0,129	0,142	0,133	0,137	0,134
Eggs	piece	Selling	0,250	0,260	0,249	0,260	0,259
Milk (cow)	l	Purchase	0,550	0,541	0,562	10,250	10,438
Milk (cow)	l	Selling	1,160	1,140	1,138	1,170	1,147
Honey	kg	Purchase	8,929	9,207	9,000	6,088	5,672
Honey	kg	Selling	12,600	13,020	13,566	13,360	14,270

Source: Statistical Yearbook of Republic of Srpska, 2021 & author's calculations

The data collected in this way will be used to examine whether the purchase prices are a good predictor for the selling prices of agricultural prices in the food markets.

The initial model used in this paper is:

$$\text{selling price}_{i,t} = \beta_0 + \beta_1 \cdot \text{purchase price}_{i,t} + u_{i,t},$$

where i denominates the observed agricultural product, t is the observed year, and $u_{i,t}$ is the error term.

The first step in the analysis is to estimate the parameters β_0 and β_1 based on the sample data. The pooled ordinary least square (OLS) estimates are used to derive the estimates b_0 and b_1 , minimising the sum of squared residuals (Wooldridge, 2019, pp. 27).

The next step is to check whether models using fixed or random effects would be a better fit than the pooled OLS method by using the Hausman specification test. Depending on the results of the test, one of the three models is selected as the best for further analysis, checking for heteroskedasticity and autocorrelation in the model.

The decision on whether or not to reject the initial hypothesis will be made using the results of the conducted tests and the explanatory power of the estimated model.

3. Results and Findings

The pooled OLS estimates for the parameters β_0 and β_1 using the robust standard error render the following results:

Table 2. Pooled OLS Estimates

Linear regression	Number of obs	=	100
	F(10, 89)	=	103.63
	Prob > F	=	0.0000
	R-squared	=	0.9513
	Root MSE	=	.83612

Y	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
X	1.456332	.0701058	20.77	0.000	1.317033	1.595631
Year						
2012	-.1550328	.2917978	-0.53	0.597	-.7348287	.4247632
2013	-.0763569	.1877282	-0.41	0.685	-.4493689	.296655
2014	-.1682692	.2103808	-0.80	0.426	-.5862913	.2497529
2015	-.0053933	.1615657	-0.03	0.973	-.326421	.3156344
2016	-.1671857	.1510666	-1.11	0.271	-.4673518	.1329803
2017	-.0940103	.1557056	-0.60	0.548	-.403394	.2153734
2018	.1771545	.183512	0.97	0.337	-.18748	.5417889
2019	.7172361	.4688002	1.53	0.130	-.21426	1.648732
2020	.899115	.6061205	1.48	0.142	-.3052335	2.103463
_cons	.1945154	.1577604	1.23	0.221	-.1189513	.507982

Source: author's calculation

From Table 2, the estimated econometric model is as follows:

$$\widehat{selling\ price}_i = 0.1945 + 1.4563 \cdot \widehat{purchase\ price}_i,$$

implying that an increase in purchase prices of agricultural products of 1 BAM leads to an increase in the selling price of agricultural products of approximately 1.4563 BAM. The p-value of the coefficient b_1 is 0.000, meaning that the coefficient is statistically significant and different from zero, so the purchase prices do have a significant effect on the selling prices. The p-value of the constant coefficient b_0 is 0.221, making it theoretically statistically insignificant and suggesting that perhaps a non-intercept model would be a better fit. In this case, however, there is no theoretical justification to use such a model (Kozak & Kozak, 1995), as economics logic suggests that, hypothetically speaking, the selling price of the agricultural product on the green markets should not be zero, even if the products were indeed purchased for 0 BAM. For that reason, the constant is kept in the regression model.

The upper part of Table 2 provides information on the overall fit of the model. With the F-value being 103.63 and the p-value being 0.0000, the dependent variable shows a statistically significant relationship with the independent variable, and it can therefore be said that the independent variable (purchase price) reliably predicts the dependent variable (selling price) (stata.com, Linear Regression, 2022).

Table 2 also reports the R-squared value of 0.9513, indicating that the fitted values of purchase prices account for 95.13% of the variability in the selling prices (Hahn, 1973). This is a very desirable finding, as it shows that there is a strong and significant correlation between the two variables being observed, and essentially that purchase prices do a good job of explaining the variability and the movement of the selling prices. Nevertheless, it is important to understand that correlation does not mean causality, and that a high R-squared does not necessarily imply that the changes in purchase price cause the respective changes in the selling prices and may not give reliable predictions when extrapolating beyond the observed data (Hahn, 1973). This essentially means that the two variables show similar paths over time and that by knowing the value of the

independent variable, reasonable predictions can be made about the independent one, but it is not proven that the change in one is caused by the change in the other variable.

In addition to pooled regression discussed in the previous sections, models with fixed and random effects may be more suitable when examining panel data (Greene, 2017, pp. 376). To check which of the two models would be more suitable for the observed data, the Hausman Specification test was conducted. The results are given in Table 3.

Table 3. Hausman Test - Fixed vs Random Effects

	Coefficients			
	(b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
X	-.3590599	1.117525	-1.476584	.1596754

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\begin{aligned} \text{chi2}(1) &= (b-B)'[(V_b-V_B)^{-1}](b-B) \\ &= 85.51 \\ \text{Prob}>\text{chi2} &= 0.0000 \end{aligned}$$

Source: author's calculation

The Stata output in Table 3 suggests that the random-effects model is not suitable in this case (stata.com, Hausman Specification Test, 2022), so the fixed-effects model could be considered. When estimating data using the fixed-effects model, the results in Table 4 are obtained.

Table 4. Fixed Effects Model

```
Fixed-effects (within) regression      Number of obs   =      100
Group variable: Proizvod1             Number of groups =       10

R-sq:                                  Obs per group:
    within = 0.2588                    min       =       10
    between = 0.9962                    avg       =      10.0
    overall = 0.9410                    max       =       10

corr(u_i, Xb) = -0.9822                F(1,89)         =      31.07
                                         Prob > F        =      0.0000
```

Y	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
X	-.3590599	.0644159	-5.57	0.000	-.4870528 - .2310669
_cons	2.666693	.088269	30.21	0.000	2.491305 2.842082
sigma_u	4.6430644				
sigma_e	.279686				
rho	.99638458	(fraction of variance due to u_i)			

F test that all u_i=0: F(9, 89) = 97.19 Prob > F = 0.0000

Source: author's calculation

The first and most important observation in the table is that the b_1 coefficient has a negative sign, implying that a rise in the purchase price of 1 BAM would cause a decrease in the selling price of approximately 0.36 BAM. This finding opposes the pure economics logic, as well

as the sample data given in Table 1, which clearly shows that the relationship between the two variables is positive. Therefore, the fixed-effects model will not be further considered, and the pooled OLS regression will be held as the most appropriate model for the considered data.

The next step is to examine whether the pooled OLS model is homoscedastic, i.e. if it has a constant variance. For this purpose, White's test is used and renders the results given in Table 5.

Table 5. White's Test

White's test for H_0 : homoskedasticity
against H_a : unrestricted heteroskedasticity

chi2(20) = 97.75
Prob > chi2 = 0.0000

Cameron & Trivedi's decomposition of IM-test

Source	chi2	df	p
Heteroskedasticity	97.75	20	0.0000
Skewness	16.93	10	0.0760
Kurtosis	1.73	1	0.1880
Total	116.41	31	0.0000

Source: author's calculation

The p-value of 0.0000 suggests that the null hypothesis of homoskedasticity should be rejected, and that the model has a heteroscedastic variance considering any risk level. The error term does not have constant variance and is not identically distributed in the data sample, making the OLS results inadequate as they do not provide the best linear unbiased estimators anymore (Afshan, Aslam, Altaf, & Amanullah, 2018). Therefore, the initial model as such should not be held as reliable for the given data observed, especially when it comes to forecasting using the model. Next, the autocorrelation test is conducted.

Table 6. Wooldridge Test for Autocorrelation

Wooldridge test for autocorrelation in panel data

H_0 : no first-order autocorrelation

F(1, 9) = 11.388
Prob > F = 0.0082

Source: author's calculation

Again, with the p-value of 0.0082, the null hypothesis of no first-order autocorrelation is rejected at any risk level, suggesting that the observed data is correlated with its values from the previous period (Drukker, 2003).

Additionally, the stationarity of the dependent variable in the model is checked using the Levin-Lin-Chu test, which tests the hypothesis that each individual time series contains a unit root against the alternative hypothesis that each time series is stationary (Levin, Lin, & Chu, 2002).

Table 7. Levin–Lin–Chu Unit-Root Test

Levin-Lin-Chu unit-root test for Y

Ho: Panels contain unit roots	Number of panels =	10
Ha: Panels are stationary	Number of periods =	10
AR parameter: Common	Asymptotics: N/T -> 0	
Panel means: Included		
Time trend: Not included		

ADF regressions: 1 lag
LR variance: Bartlett kernel, 6.00 lags average (chosen by LLC)

	Statistic	p-value
Unadjusted t	-6.0661	
Adjusted t*	-2.7325	0.0031

Source: author’s calculation

The p-value of 0.0031 suggests that the null hypothesis should be rejected at the risk level of 5%, indicating that the observed panels have the desired property of stationarity.

The two findings of heteroskedasticity and autocorrelation, despite the stationarity, suggest that the pooled OLS does not make a good fit for modeling the selling prices of agricultural products using the purchase prices when working with the original data. Hausman specification test also showed that models with fixed or random effects would also not be suitable, so the bottom conclusion is that the nominal level of purchase prices is not reliable for modeling the selling prices.

4. Conclusion

The main goal of this article was to examine whether the purchase price of agricultural products can be used to model their selling prices on green markets, with the main hypothesis that there is a statistically significant influence between the dependent and independent variables.

Data on the prices of 10 different agricultural products in the Republic of Srpska was collected for the period from 2011 until 2020, and the regression coefficients were estimated using the pooled OLS method. Models with fixed and random effects were also considered, but the Hausman specification test indicated that their use would not be beneficial in this case.

The pooled OLS estimates provided a seemingly good fit, as the coefficients were statistically significant, with a high R-squared value, indicating that the model was almost deterministic. However, additional tests detected the pronounced problems of heteroskedasticity and autocorrelation in the model, which ultimately proves that the model itself is not good enough to be used for reliable forecasting and extrapolation, as it may lead to inaccurate predictions. Therefore, the initial hypothesis that the purchase prices of agricultural products predict well their selling prices on food markets is rejected.

This finding holds only for the data collected in the sample and the linear model. Further steps would be to examine log-linear and log-log models and see if they provide a better fit for the analysed data.

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THE EFFICIENCY OF FISCAL SUPPORT AND IMPACT OF THE COVID-19 PANDEMIC ON ENTREPRENEURSHIP

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Abstract

The COVID-19 pandemic that caused a structural turn in the functioning of the economy from 2020 is a specific challenge in terms of preserving economic and fiscal stability in Bosnia and Herzegovina. The pandemic had a strong impact on economic trends, simultaneously leading to a shock in aggregate supply and aggregate demand. Relying on existing empirical studies and survey data from Bosnia and Herzegovina, we investigate the efficiency of fiscal policy and the effect of the pandemic on entrepreneurship. Precisely, we consider the effectiveness of fiscal policy measures aimed at mitigating the immediate impact of the pandemic on companies and maintaining economic activity. Strong economic contraction seriously threatens the entrepreneurship that represents a vital resource for the development of the economy. Considering different factors that determine job losses in the SME sector, including the efficiency of fiscal support, the research findings are relevant for defining macro-fiscal targets and development-oriented policy.

Keywords: fiscal policy, fiscal sustainability, economic recovery, entrepreneurship, SME, labor
JEL classification: E52, L26

ABSORPTION CAPACITY OF SECTOR BUDGET SUPPORT UNDER IPA II (2014-2020) (COMPARATIVE ANALYSIS OF WESTERN BALKAN COUNTRIES)

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Abstract

EU accession is one of the main priorities on the agenda of the Western Balkan countries, and even more for Albania, for which negotiations were opened in July 2022, as well as for North Macedonia. One of the assistance instruments provided by the EU in this regard is the Pre-accession Instrument (IPA) with a focus on supporting those national reforms that bring the country closer to the EU in the key areas, such as the rule of law, economic governance, public administration reform, and public financial management. There are few studies on the instrument of Sector Budget Support (SBS) introduced for the first time under IPA II 2014- 2020 and some of them concluded that the farther the country is from EU membership, the greater is the appropriateness of the SBS instrument. This paper intends to provide an analytical overview of SBS instrument for the Western Balkan countries, absorption capacity, the weight of the sector budget support and complementary support, as well as the benefits of the Western Balkans from this instrument. Special focus will be given to the comparative analysis of Albania with other Western Balkan countries, and the characteristics of sector reform contracts of Albania in terms of absorption capacities. The findings show that despite Albania which holds the first place for the amount absorbed and disbursed in absolute and nominal value for sector reform contract, other countries have few signed contracts, while any such contract is signed for Bosnia and Herzegovina. Also, concentrating the allocated amount to a smaller number of indicators increases the probability of a reduction in the disbursement rate in case the indicators fail to be met. As the negotiations for IPA III have currently started, the paper would help Western Balkan countries to decide what should be the weight of IPA funds that should be channelled through the SBS instrument for a candidate country and which is the optimal combination of the characteristics of sector reform contracts, so the absorption capacity could be maximised.

Keywords: EU accession, Absorption capacity, SBS, Western Balkans, IPA funds.

ENSION FUNDS AND THE INTRODUCTION OF THE EURO IN CROATIA - CURRENT CHALLENGES AND OPPORTUNITIES

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Abstract

The significant asset losses of pension funds in Croatia at the beginning of the pandemic and again with the onset of Russian aggression against Ukraine have caused public concern, but it has been shown that pension funds recover relatively quickly from these short-term, sudden shocks, as they do not pose a significant challenge to pension funds. However, they have been facing a significant challenge for a long time, which became more concrete with the introduction of the euro in Croatia. The last decade has been characterized by historically low interest rates. As Croatia had a low credit rating, it borrowed at higher rates than most European countries. Due to their legal framework, domestic pension funds invested a significant part of their assets in bonds issued by the Republic of Croatia. As interest rates around the world decreased, the Republic of Croatia's existing bonds became more valuable, allowing pension funds to earn high-quality returns. However, as interest rates on new government bonds around the world continue to decline, pension funds are no longer able to earn high returns by investing in government bonds. This trend is exacerbated by the introduction of the euro in Croatia, which improves the country's credit rating. A higher rating means lower interest rates on government bonds, which in turn means lower returns for pension funds investing in them. Therefore, the aim of this paper is to analyze comparatively the changes in the investment structure of pension funds and the changes of interest rates on government bonds of recent euro area member countries, including Croatia, in the period before and after the introduction of the euro, in order to assess the impact of the euro introduction on the investment structure of pension funds. The analysis includes statistical processing of secondary data from Hanfa and other supervisory authorities, pension funds and the OECD, the preparation of projections for future periods as well as the processing of qualitative data in the form of public declarations of process stakeholders. The research results show that pension funds in Croatia have been proactively positioning themselves and are looking for new investment opportunities thus implicating the need for timely harmonization of relevant legislation, especially towards the protection of pension fund members, as certain legislative changes are underway that will give pension funds more freedom in allocating funds.

Keywords: pension funds, Croatia, euro, asset allocation, interest rates

JEL classification: E44, G12, G23, J32

THE NECESSITY OF EXPANDING THE OFFER OF PURPOSE LOANS FOR SOCIALLY VULNERABLE POPULATION IN BIH

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Abstract

The main purpose of this paper was to research the need for different specific purpose loans in order to help finance needs of a socially vulnerable segment of the population of Bosnia and Herzegovina. Since the amount of savings is constantly increasing in the country. It should have a positive effect on the financing of the socially vulnerable part of the population, especially for the purpose of financing basic existential needs or starting a small family business. Easier financing for socially and financially excluded part of the population has not been realized for years, although the increase in savings of the population has been confirmed every year. The domestic financial sector, predominantly (>90%) in the hands of foreign owners, does not tend to finance the socially vulnerable population or micro-entrepreneurs as it would expose them to a larger credit risk. Such situation is present on the market in a last two decades, so financing of the socially vulnerable, small family business or startup should be provided in some alternative way, without expecting more from foreign financial conglomerates. Financing the socially vulnerable part of the population and financing the initiation of their micro-projects reduces unemployment, and increases the social inclusion of the population as one of the primary goals of EC guidelines and their funds for social projects. Even the quite well-regulated financial market in Bosnia and Herzegovina is not enough to achieve the goal and facilitate access to the financial market for the socially vulnerable and SMEs. The financial literacy of the participants in the country's economic life, with special reference to small family business and micro-entrepreneurs, is relatively low and it is one of the important factors in the slow development of the alternative sources of financing and their use. The low level of financial literacy represents an obstacle in finding solutions for entrepreneurs to finance both their initial ideas and development, as well as the actual sale of their products or services. Through our primary research in which 1093 respondents from Bosnia and Herzegovina participated, we determined a large need for specific financing of various products and services that is currently not available in local banks. Easier financing of small and micro entrepreneurs, as well as users of their products and services, would increase the inclusion of the socially vulnerable part of the population and encourage the development of a large part of the smallest companies which are the base of every good and stable economic system of country.

Keywords: financial institutions, banks, loans, financial literacy

JEL classification: M31, G2, G20

EFFECTS OF THE COVID-19 PANDEMIC ON TRAVEL HABITS – CASE STUDY BOSNIA AND HERZEGOVINA

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Abstract

Crisis situations in tourism sector became quite frequent, and many destinations have developed different strategies for overcoming and mitigating consequences. However, the COVID-19 pandemic is different, primarily due to its rapid spread, collapse of the economy that it caused, but also changes in many segments of tourism demand and supply. The purpose of this paper is to examine the effects that COVID-19 pandemic had on travel habits of Bosnia and Herzegovina's population. Research was conducted during January 2021, when the COVID-19 virus was widely present, and all respondents experienced life and travel in pandemic conditions. The questionnaire used during the research was distributed via e-mail and social networks (Facebook and LinkedIn). A total of 1.582 responses were collected. The main research questions were related to: (1) changes in travel habits, (2) how these changes are interrelated with income and fear of infection (3) how tourist trips will look in the future. This research represents one of the first attempts to identify and analyze travel habits and patterns of citizens of Bosnia and Herzegovina and can be used for planning purposes and improvement of tourism sector during COVID-19 and post-COVID-19 period.

Keywords: tourism, COVID-19, travel habits, Bosnia and Herzegovina.

JEL classification: Z320 Tourism and Development

Introduction

COVID-19 pandemic marked the year 2020, and it is still the main concern and preoccupation of countries around the world. States and regions are fighting the pandemic in different ways, and in accordance with the epidemiological situation, they are introducing restrictions and measures related to travel and tourism. The first case of COVID-19 in Bosnia and Herzegovina was recorded on March 5 2020, after which the number of patients grows exponentially. The COVID-19 pandemic caused a high mortality rate. According to UNWTO (2020) data, by the end of 2020, more than 1.5 million people worldwide died, and more than 65 million were infected.

Earlier events, such as MERS and SARS, affected certain regions, lasted shorter, and fewer cases of illness or death were recorded (Wen et al., 2005; Kim et al., 2017). The COVID-19 pandemic has affected tourism like no other crisis in history, and the consequences for the entire economy due to the nature of the virus that is still present cannot yet be seen, primarily due to the fact that the tourism and travel industry depends entirely on people's willingness to travel

(Gössling et al., 2021; Miao et al., 2021). Spread of the COVID-19 virus in the world, including Bosnia and Herzegovina, enabled to observe, analyze and predict short-term and long-term travel habits and patterns in pandemic conditions. This research represents one of the first attempts to identify and analyze travel habits and patterns of citizens of Bosnia and Herzegovina before and after the COVID-19 pandemic.

Literature review

Tourism and pandemics

In the past, world tourism was exposed to various crisis situations (Fig. 1), and the rate of occurrence of major epidemics and pandemics is increasing. In the 20th century, three pandemics were recorded: "Spanish" flu or flu of 1918-1919, then the "Asian" flu (H2N2) of 1957 and the "Hong Kong" flu of 1968. On the other hand, the 21st century has already been marked by several pandemics: SARS in 2002, avian and swine flu in 2009, MERS in 2012, and Ebola, which peaked in 2013-2014. (Coker et al., 2011; Greger, 2007; Wu et al., 2017). The period between 2000 and 2015 was marked, in addition to SARS and MERS, by the terrorist attacks of 09/11 (2001) and the global economic crisis of 2008-2009. However, none of the mentioned events led to a long-term decline in the modern development of tourism, and some of them were not even noticeable in tourist trends (Gössling et al., 2021). Only SARS (-0.4%) and the global economic crisis (-4.0%) led to a decline in international tourist movements (Gössling et al., 2021; World Bank 2020a, 2020b), which easily leads to the conclusion that tourism as a system is resistant to external crises. Financial losses due to the outbreak of SARS were estimated at US\$100 billion, of which US\$48 billion in China (McKercher & Chon, 2004; Siu & Wong, 2004).

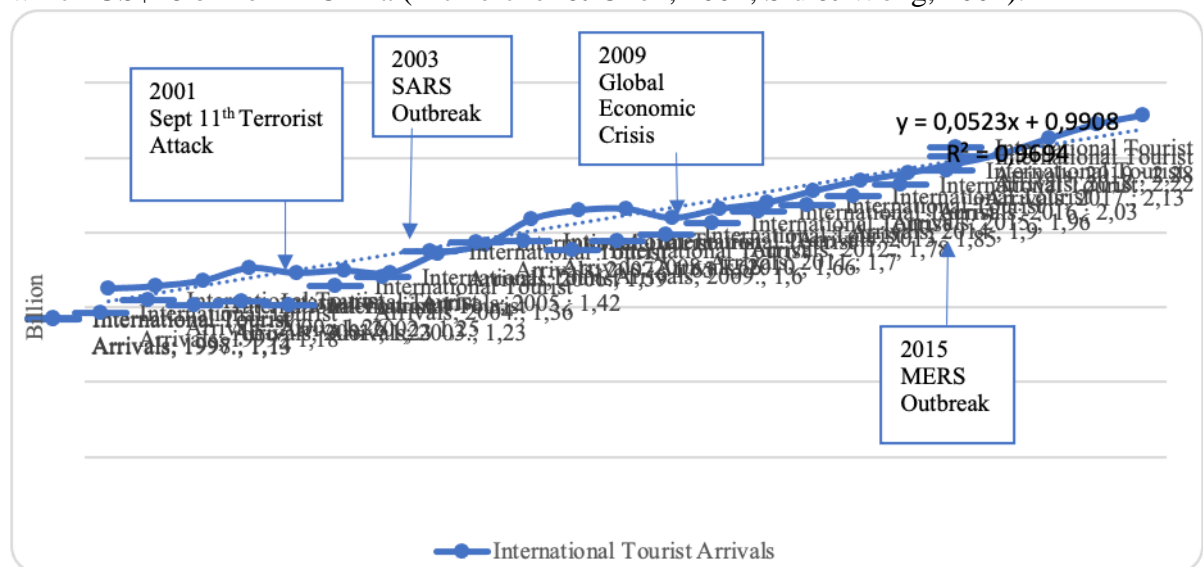


Fig. 1. The impact of crisis situations on international tourism

Source: World Bank (2020a, 2020b), Gössling et al. (2021).

MERS was identified in Egypt in 2012, but gained attention due to the large number of infected individuals participating in the Hajj in Saudi Arabia (Al-Tawfiqef et al., 2014), while Ebola outbreak created negative perceptions for African destinations (Maphanga & Henama, 2019; Novelli et al., 2018). Both Ebola and MERS were significant in raising awareness to the danger of global pandemics (Gössling et al., 2021).

During the pandemic of Spanish flu in 1918 and 1919 about 500 million people were infected, and between 20 and 100 million people died (Johnson & Mueller, 2002; Jeffery & David, 2006; Gössling et al., 2021). In medical circles, pandemic was cited as the first "modern"

pandemic characterized by rapid movement through the global transportation system (Killingray, 2003; Taubenberger & Morens, 2006). The Spanish flu is mentioned in the context of the COVID-19 pandemic not only because of its similar virulence, but also because measures like quarantine and travel restrictions implemented at the time were also used to mitigate the effects of COVID-19 (Gössling et al., 2021).

As a result of travel restrictions and movement bans, international tourist movements have been significantly reduced, and the number of international flights has also been reduced by more than half (FlightRadar24, 2020). The uncertainty and dynamics of adopted measures and political decisions are also reflected in the estimates of the impact of COVID-19 on the tourism sector of the UNWTO, which were significantly revised from the beginning to the end of March 2020. A UNWTO press release dated March 6, 2020 (2020a) estimated that the pandemic would cause international tourist arrivals to decline by 1-3% (compared to 2019), rather than the projected 3-4% growth. Three weeks later, on March 26, this estimate was updated to a 20-30% loss of international arrivals (UNWTO 2020b), to end 2020 with a recorded decline of as much as 75% less international arrivals compared to 2019. The drop in tourist numbers of 84% was also recorded in the first half of 2021. According to UNWTO data (October 2021), 54 million tourists traveled in July 2021, which is 67% less compared to the same month in 2019, but still the highest number of tourists recorded from April 2020.

The tourism sector of BiH has been recognized as a key priority to address in national economic development strategy, as it is noted to hold a significant development potential. Tourism accounts for a rising share of GDP in BiH and the sector has been an increasingly important generator of revenue and jobs. However, COVID-19 outbreak, has reversed this upward trend in the economy. International estimates suggest a negative GDP growth rate (-6.5%) following a downward trend in industrial production, retail and trade. (ETF, 2020, pp.4).

The pandemic and lockdown decreased the share of international travelers travelling to BiH from 75% in 2019 to 44% in 2020. Tourist arrivals and tourist nights in 2020 in BiH are at the level of 25.7% and 28.9% respectively of those in 2019. The pandemics stopped a positive trend of growth of tourism in BiH, since 2020 began promising by March 2020 but has been stopped since (Peštek et al., 2021).

Therefore, crisis situations in tourism are a regular occurrence, and many destinations have developed different strategies for overcoming and mitigating the consequences of similar events. However, the COVID-19 pandemic is different, primarily due to the rapid spread, the collapse of the tourism economy that it caused, but also changes in many segments of tourism demand and supply (Gössling et al., 2021).

Tourist behavior in period of crisis

The economic and political situation also affect changes in the behavior of tourists and the demand for travel. As a consequence of pandemic restrictions, tourists' behavior is influenced by numerous factors, primarily their own income, changes in prices, perceived health risks and changed spending habits (Lee & Chen, 2011). Also, the behavior of tourists can be influenced by the information in media and on social networks, so there are often exaggerated reactions, primarily because of the large media coverage (Williams, et al., 2020; Rogerson & Rogerson, 2021).

Due to the spread of the COVID-19 virus, a lockdown followed in March 2020 in countries around the world, which, among other things, resulted in a large number of studies and research on possible changes in the tourism industry, and the habits of tourists in different countries of the world (Table 1). Psychological factors, i.e. the fear of infection, were reflected in the willingness to travel, as well as in the choice of a vacation destination (Rogerson & Rogerson,

2021). Economic factors associated with decrease in household income (consequence of unemployment or reduced working hours), unemployment and working from home, also affected people's mobility, that is, the frequency and purpose of their trips (Awad-Nunez et al., 2021).

The behavior of tourists during and after crisis situations such as epidemics, terrorist attacks, natural disasters and financial crises are analyzed in the tourism literature due to new behavior patterns that appear as a reaction to fear and insecurity (Chien et al., 2017; Fennell, 2017). The largest number of published studies and scientific papers analyze the impact of COVID-19 on the tourism economy, which is expected given the fact that with the increase in health risk, tourism demand decreases (Yang et al., 2020). However, there are also relevant studies related to tourist behavior (Li et al., 2021; Peluso & Pichieri, 2020; Rogerson & Rogerson, 2021), perceived risk, travel habits (Gudkov & Alieva, 2021; Zenker et al., 2021), and the

Country	Authors
Australia	Easther & Delbosc, 2022; Butler & Szili, 2020;
Austria	Eichelberger et al., 2021; Neuburger & Egger, 2020
Bangladesh	Afroz et al., 2022.
China	Jin & Bao, 2021; Yin & Ni, 2021; Zheng et al., 2021;
Costa Rica	Calderon et al, 2022
Czech Republic	Vashar & Štastná, 2020
Germany	Neuburger & Egger, 2020
India	Dileep et al., 2022;
Indonesia	Pahrudin et al., 2021;
Italy	Peluso & Pichierri, 2020
Malaysia	Ahmad et al., 2020;
Poland	Kowalska & Niezgoda, 2020; Uglis et al., 2021
Portugal	Silva, 2021
Russia and Uzbekistan	Gudkov & Alieva, 2021
Serbia	Perić et al., 2021
Slovakia	Machová et al., 2021;
South Korea	Bae & Chang, 2021; Qiao et al., 2021; Shin et al., 2022;
Spain	Arbulu et al., 2021
Switzerland	Neuburger & Egger, 2020
Turkey	Aydin et al., 2022; Shakibaei et al., 2021.
United Kingdom	Foroudi et al., 2021
USA	Humagain & Singleton, 2021; Zenker et al., 2021
Zimbabwe	Woyo, 2021

development and improvement of contactless services in tourism, through investments in new technologies, especially in developed countries (Bae & Chang, 2021; Jeon & Yang, 2021).

Table 1. Academic papers and research on COVID-19 and tourist behavior

Source: Authors

A large number of conducted studies have resulted in similar conclusions regarding the transport of tourists, where means of transport that entail greater risk and exposure (cruise ships, airplanes, as well as public bus and rail transport) are increasingly being abandoned, and prefer private or rental car (Eichelberger et al., 2021) and even RVs (Rogerson & Rogerson, 2021).

Mazareanu (2021) conducted a study on travel habits after COVID-19 on a sample of 9,596 respondents worldwide. The results of the research also showed that as many as 83% of respondents believe that their habits will change in the post-COVID-19 period, mostly in terms of choosing a means of transport. More than 40% believe that they will travel less regardless of the means of transport, while around 30% of respondents will use the plane less often, and 4% will travel as often as before, but not by plane. 17% of respondents will not change their travel habits, while 25% will no longer choose distant destinations. 19% of respondents will use the services of certain airlines, which according to their assessment are safe, while 23% will travel by plane only in case of extreme emergency.

Distance has been recognized as one of the most important factors affecting tourist behavior (Choe et al., 2014). Avoiding distant destinations and overseas flights has influenced the increase in the number of trips and overnight stays by the tourists in their countries, which contributes to the development of the local economy and the purchase of domestic products (Eichelberger et al., 2021). Tourists use local services and products in an attempt to contribute to local commerce (Dias et al., 2021). The promotion of domestic destinations, especially recreational areas, has proven to be an important strategy for the development of tourism in local communities, however, Woyo (2021) states that one should be careful, because tourism products intended for foreign tourists are often expensive for the local market.

Smith (2021) states that for urban tourism destinations, tourist behavior will change in the short term, as they will be less willing to visit crowded places or gather in large groups, which could lead to a decrease in the number of tourists or potentially change the intra-city distribution of tourists, enabling cities to expand their tourism supply and distribute tourist facilities more evenly.

Eichelberger et al. (2021) state that the COVID-19 pandemic contributed to the development of responsible behavior among tourists, i.e. encouraged thinking about the environment and ecological aspects in the destination. Tourists increasingly follow various principles of sustainability, for example, multiple use of towels in hotels, and due to the reduction of contact with other people, they avoid daily cleaning of rooms, throw out garbage themselves, etc.

Therefore, as the situation with the COVID-19 pandemic develops, new challenges will appear in the organization of tourist movements, especially those that involve visits to natural tourist attractions. It is expected that in the coming period the demand for this type of activity will continue, and Mulder (2020) suggests that social distance will become part of the "new normal".

Research methodology

Although the research is limited to a certain area (Bosnia and Herzegovina), and conducted in a shorter period of time, it represents a preliminary study that can serve as a basis for future research. The main research questions were related to: (1) changes in travel habits, (2) how these changes are interrelated with income and fear of infection (3) how tourist trips will look in the future.

The questionnaire used during the research was created with the help of Google forms. It was prepared in the Bosnian language and distributed via e-mail and social networks (Facebook and LinkedIn) to the citizens of Bosnia and Herzegovina. The survey questionnaire was created based on the model of similar research (table 2), and in accordance with the stated main research questions, divided into three parts: demographic data, travel habits before and after the pandemic. Travel habits included questions about the main motives, means of transport and travel partners, duration of the trip, reasons for choosing the destination, type of accommodation facility and

activities in the destination. In addition to the above, the questionnaire contained questions about whether respondents or members of their household have recovered from COVID-19 virus, and whether the pandemic has affected their income, travel plans, and their intention to get vaccinated. The research was conducted during January 2021, when the COVID-19 virus was widely present, and all respondents experienced life and travel in pandemic conditions. The collected data were analyzed using SPSS.

Table 2. Questionnaire guidelines

Objective/ research question	Topic/Question	Literature reference
Demographic data	Gender, age, level of education, work status and income	Opačić&Banda, 2018. Peštek et al., 2019.
Travel habits	Travel motives	Huang & Hsu, 2009. Albayrak & Caber, 2018. Prayag, 2009. Choe & Kim, 2019. Otoo et. al. 2020.
	Means of transport	Dallen, 2007.
	Travel partners	Chen et al., 2016. Wong & Lau, 2001.
	Reasons for choosing a destination	Yoon & Uysal, 2005. Lam & Hsu, 2006.
	Type of accommodation facility	Losada et al., 2017.
	Activities performed in the destination	Dellaert et al., 1997. Mehemtoglu, 2007.

Source: Authors

Results and discussion

Sample characteristics

This survey comprised 1580 respondents. The gender structure of respondents is dominated by women (80%). Age group 36-45 is the most numerous with 26.6%, while the groups 26-35 (22.3%) and 46-55 (22.8%) are equally represented. 64.4% of the respondents are employed, while the rest of the respondents are unemployed, students or run their own business. Also, 24.3 % stated that their household income is higher than 2.500 BAM (1.250 EUR) and only 4.4 % have income less than 500 BAM (250 EUR).

Table 3. Sociodemographic characteristics

SAMPLE CHARACTERISTICS		N	%
Gender	Men	316	20
	Women	1264	80
Age	18-25	332	21.0
	26-35	352	22.3

	36-45	420	26.6
	46-55	360	22.8
	56-65	102	6.5
	65+	14	0.9
Level of education	Primary school	12	0.8
	High school	408	25.8
	College or university	778	49.2
	Master's or PhD	382	24.2
Employment	Employed	1017	64.4
	Unemployed	182	11.5
	I run my own business	116	7.3
	Student	225	14.2
Household income (BAM)	< 500	70	4.4
	500 - 1.000	276	17.5
	1.001 - 1.500	348	22.0
	1.501 -2.000	332	21.0
	2.001 - 2.500	170	10.8
	> 2.500	384	24.3

Source: Authors

An important research question was related to the fact whether the respondents or members of their household were infected with COVID-19. Among the respondents, the majority were those who did not have previous COVID-19 infection (77.7%) (Fig. 2), as well as members of their households (70.9%) (Fig. 3).

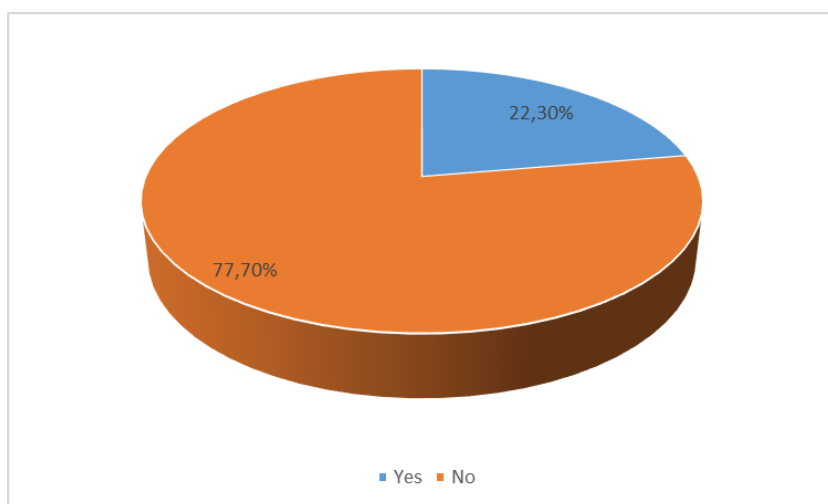


Fig. 2. Tested positive for COVID-19

Source: Authors

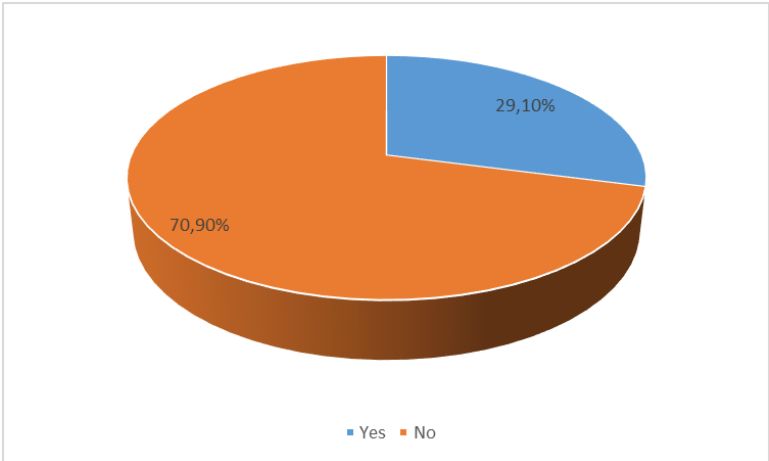


Fig. 3. Household members tested positive for COVID-19

Source: Authors

COVID -19 and travels

Number of travels positively and statistically significantly correlates with age, education, and income. Before the pandemic, 27.6 % respondents traveled more than five times in a year (Fig.4.) and 72.8% of their trips lasted more than three days (Fig.5.). Also, 73.4 % had to cancel their travel due to COVID-19.

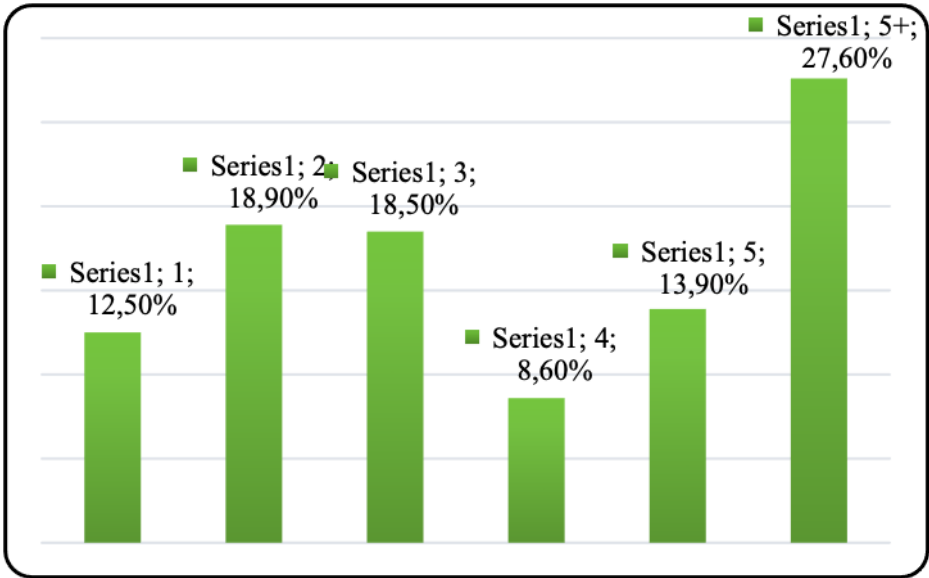


Fig. 4. Number of travels 12 months before the COVID-19 pandemic

Source: Authors

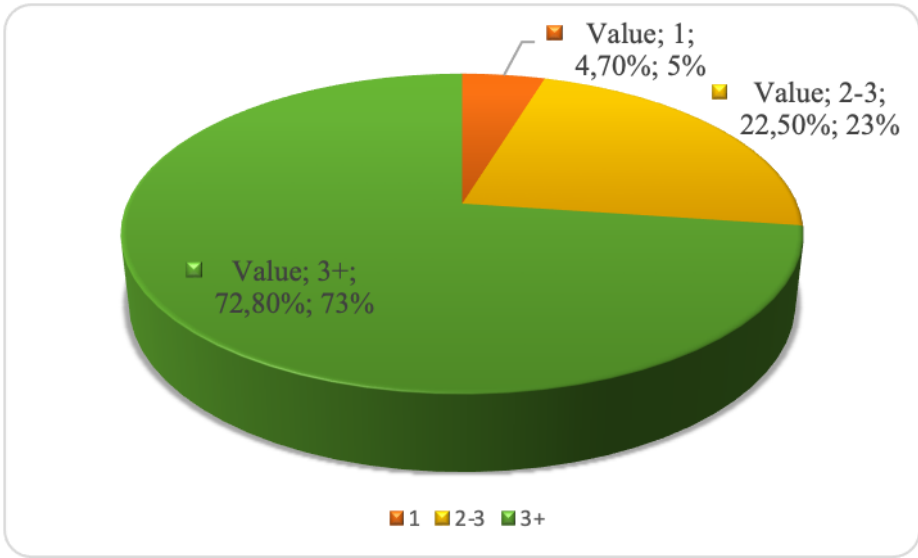


Fig. 5. The most common trip duration before the COVID-19 pandemic
Source: Authors

When asked about the travel budget, 48% of respondents said that their travel budget will be the same as before the pandemic, while 38% believe that their budget will be smaller. More than half respondents stated that they organize their travels independently via Internet (58.3 % before and 60.3 % after the pandemic).

COVID -19 and travel habits

Travel motives have not changed compared to the period before the COVID-19 pandemic. According to 21.8 % of respondents before and 21% after the pandemic, rest and relaxation is the far most important reason for traveling. After the pandemic, approximately 30 % of the respondents will continue traveling with their friends and colleagues as well as close family. Only 4% more respondents will travel only with their partner, and 3% no longer want to travel with a tourist group.

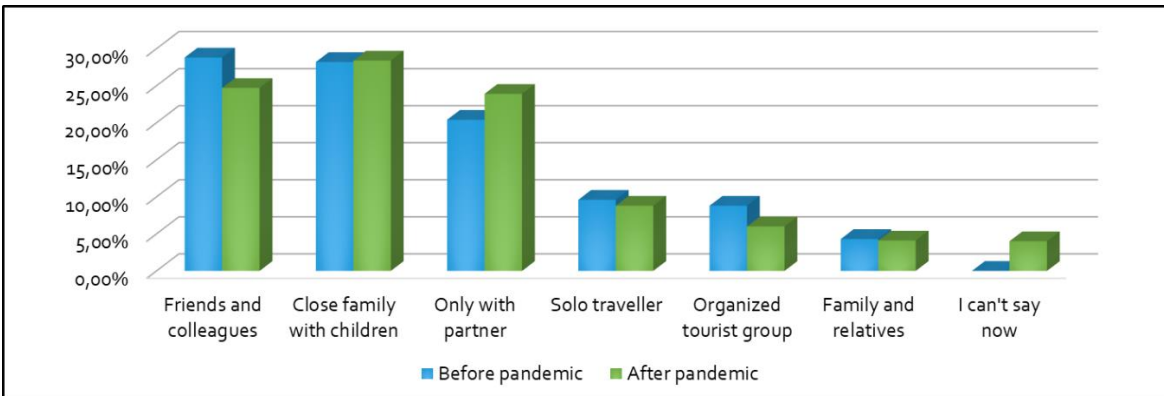


Fig. 6. Travel partner before and after the COVID-19 pandemic
Source: Authors

Cleanliness and maintenance of hygiene are cited as important factors when choosing future destinations (Ilgaz et al., 2021; Yu et al., 2021). Accordingly, health and epidemiological measures are the new reason for choosing destination in post covid period for 6.2 % respondents (Tab. 4.).

Table 4. Respondents reasons for choosing travel destination in the future

Reasons for choosing a travel destination	Before	After
Tourist attractions in the destination	13.0%	9.1%
Previous experience with the destination	12.3%	8.7%
Good price	11.1%	9.1%
Simplicity of travel organization	6.9%	5.1%
Visit to a destination that many people think is worth seeing	6.3%	3.8%
Health and epidemiological measures		6.2%
Travel restrictions and border closure/openness		4.9%
Need for testing/vaccination		4.3%

Source: Authors

The impact of the COVID-19 pandemic

New challenge for the destination development will be the changed perception of crowding, i.e. being with a larger number of people in a certain place, which is a direct consequence of the fear of close human contact due to COVID-19 (Zheng et al., 2021).

In the survey questionnaire, respondents marked statements from 1 to 5 that refer to their attitudes on the impact of the COVID-19 pandemic on their future trips (Tab. 5). In the future, respondents will avoid crowds, mass tourism destinations and travel in in groups. Dias et al. (2021) and Jeon & Yang (2021) came to similar results, ie. that tourists will prefer to travel within their country or countries of their region, avoid crowds and stopovers, as well as prefer destinations that are not the destination of a large number of tourists. Remote natural areas will be popular in the future (Gudkov & Alieva, 2021), which was also confirmed in our research. Among the most significant (post) COVID-19 destinations are protected natural areas, primarily due to their positive impact on human physical and mental health (Qiu et al., 2021).

Table 5. Respondents' attitudes on travel after COVID-19

Statement	Mean	Std. Deviation
Compared to previous years, after the pandemic I will travel less.	3.56	1.262
Saving human lives is more important than saving the economy and tourism.	3.45	1.228
I will choose destination based on restriction measures and border regulations	3.79	1.105
I will respect the prescribed hygiene and epidemiological measures.	4.33	.967
I will prefer staying in nature.	4.09	1.018
I will prefer destinations that are not the destination of a large number of tourists	3.45	1.270
I will avoid traveling in groups.	3.31	1.400
I will avoid large gatherings and events.	3.51	1.376

Source: Authors

Using ANOVA, we tested differences in attitudes between respondents who were infected with COVID-19 virus and those who did not. The research results showed statistical significance for the following statements ($p < 0.05$):

- I will avoid taxi and public transport ($p = 0.001$).
- I will prefer destinations that are not the destination of a large number of tourists ($p = 0.021$).
- I will prefer destinations in Bosnia and Herzegovina ($p = 0.023$).
- I will avoid large gatherings and events ($p = 0.018$).
- I will organize my travel myself ($p = 0.002$).

Respondents who suffered from COVID-19 will be more careful in the future. The COVID-19 pandemic caused „fear of travel,” and people are thinking about how to stay safe while traveling during and after the pandemic (Ritchie, 2021). Perić et al. (2021) point out that the perceived risk will be the most significant factor that will influence tourists' intention to travel.

Conclusion

Lockdown, large number of infected and high mortality rate due to the COVID-19 pandemic have had a negative impact on the tourism sector, but also on people's perception about travel plans for the future. Bosnia and Herzegovina's tourism sector has been affected by travel restrictions and lockdowns. Yet, there are very few research about future travel habits and attitudes of Bosnia and Herzegovina's residents. This research was one of the first attempts to analyze changes in travel habits and their connection with income and fear of infection. Also, important research question referred to future tourist trips.

First research and papers on the impact of the COVID-19 pandemic overemphasized the long-term nature and importance of changes in travel habits. Virus mutation into a milder form and loosening the measures gradually led to return to old behavior patterns. Research results show that residents of B&H will pay more attention to health and epidemiological measures when choosing destination in post-covid period. Travel destination, motives and activities in the destination will be similar to pre-covid period. Respondents who suffered from COVID-19 will be more careful in the future and avoid public transportation, crowds and mass tourism destinations.

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GASTRONOMY AS A POTENTIAL FOR TOURISM DEVELOPMENT: INSIGHT INTO GASTRONOMIC OFFER IN CANTON SARAJEVO

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Abstract

Gastronomy plays an important role in overall tourism development. During the last few decades, a wide discussion is open about the potentials of food within tourism industry, which resulted in emergence of different views and aspects. Work of different researchers focuses on more certain impacts concluding that food represents an important part in creating a memorable experience, increases a destination's attractiveness and influences the overall visit to a destination. Some argue that gastronomy adds value to key tourism products because it is part of the intangible heritage of the destination, where the engagement of travel agencies and other tourism stakeholders is of great importance. Diverse and rich culinary culture of Bosnia and Herzegovina holds the potential to improve current tourism offer and advance destination attractiveness. The main of our research was to explore how much gastronomy is represented in the current tourist offer and how important it is for the overall development of tourism in the Sarajevo Canton? For the purpose of this study online research has been conducted what included distribution of questionnaire among travel agencies and tour guides. The results indicated numerous shortcomings in the current presentation and representation of the gastronomic offer, on the basis of which recommendations were given for improvement and solving the studied problem.

Keywords: Gastronomy tourism, Tourist agencies, Tours, Destination attractiveness, Tourism development.

DARK TOURISM – PROSPECTS FOR THE DEVELOPMENT OF DESTINATIONS SREBRENICA AND VUKOVAR

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Abstract

The paper and research are aimed at contributing to the development and raising the awareness of dark tourism and possibilities of its development in Srebrenica and Vukovar – symbols of suffering in Bosnia and Herzegovina and Croatia. For the needs of this paper qualitative research was conducted in the form of in-depth interviews with makers of tourism and development policies, as well as with tourism workers. Research results showed that Srebrenica and Vukovar have potentials for the development of tourism and dark tourism, but that more investments and systematic approach to the development of tourism and business environment are necessary.

Keywords: tourism; dark tourism; Srebrenica; Vukovar

1. Introduction

The paper and research are aimed at contributing to the development and raising the awareness of dark tourism. Dark tourism is a result of circumstances and factors related to events which are later defined as tourism products. This kind of tourism is also controversial, primarily due to the term itself, which is related to darkness and therefore requires a very thorough and careful approach. Consequently, it is not surprising that dark tourism is a topic of discussions. The main issue is how ethical it actually is to evaluate and profit from a site which testifies of suffering. On the other hand, commercialization has nevertheless made such sites well-known and recognizable. Dark tourism is related to many other terms from thanatological standpoint, such as memorial tourism, black spots tourism, thanatourism, morbid tourism etc., and for the needs of this paper it is viewed in its totality.

The paper is also intended to recognize potentials which Bosnia and Herzegovina and Croatia have for the development of dark tourism at destinations Srebrenica and Vukovar. The paper uses the Dark Tourism Attractiveness Scan Model, which was developed by Zaccaria, Romano and Puertas for the province of Tarragona in 2019. It will focus on analyzing potential products of dark tourism, as well as on environmental factors which are important for the development of tourism and dark tourism.

The analysis of theoretical concepts related to dark tourism, together with the conducted research, should help future studies of this phenomenon and possibilities of its development in a distinctive context.

2. Literature Review

Battlefields, cemeteries, sites of natural disasters and suffering have been attracting tourists for a long time already, and over the last couple of decades they have increasingly been attracting attention of researchers (Lennon & Folley, 2000; Sharpley & Stone, 2009; Stone, 2012; Stone, 2013; Horodnikova & Derco, 2015).

The concept of dark tourism was introduced by Lennon & Folley in 2000, in their book *Dark Tourism: The Attraction of Death and Disaster*. The term referred to tourism sites and resources which have dark features with eclectic diversity of typological cases: massacres, murders, catastrophes, disasters and other similar events. There are several definitions of dark tourism, though the terms mostly pertain to tourism sites which are typically related to death, suffering and disaster (Tunbridge & Ashworth, 1952; Tarlow, 2005; Wight, 2006; Tunbridge & Ashworth, 2017).

The most often used terms in literature are dark tourism and thanatourism. According to Light (2017), there are several significant differences between dark tourism and thanatourism. Dark tourism is typically used as an umbrella term for any form of tourism which is related to death, suffering, atrocities, tragedies or crimes. On the other hand, thanatourism is a more concise concept which refers to travelers' practices motivated by the distinctive desire to encounter death. However, it is almost impossible to analyze one concept without taking account of the other. Thus, dark tourism and thanatourism refer to an activity due to which the tourist encounters death (including crimes against humanity), disasters and violence, including a greater or lesser extent of eeriness, pain and suffering with emotional effect on individuals' life, whether for recreation purposes or for commemoration and education.

MacCannell (1989) proposed the term negative sightseeing, which refers to visiting sites with negative past. Seaton (1999) discusses the term thanatourism, while Rojek (1993) describes the term "black spots". Tunbridge & Ashworth (1996) refer to atrocity heritage tourism, Clark (2006) trauma tourism, Lennon & Foley (1996) and Seaton (1999) grief tourism and memorial tourism (Seaton, 1999; Lennon and Foley, 1999; Williamandi Miles, 2002; Slade, 2003; Stone, 2006; Franklin, 2007). Blom (2000) uses the term "morbid tourism", which refers to tourist activity which triggers an interest in visiting sites with disturbing and uneasy topics such as death and disease. He lists two kinds of morbid tourism. One is associated with situations when people are attracted by an event with a sudden and violent death, such as the terrorist attacks on 11 September (Stone, 2006), while the other is driven by human curiosity and they visit sites with haunted history (Inglis & Holmes, 2003).

Memorial tourism includes different elements (Institut za istraživanje mračnog turizma, 2013): *understanding of time* – visiting places where tragedies happened to create existing political situations; *romanticisms* – the battlefields and places are locations where visitors can identify themselves with the warrior fighting for his cause; *barbarism* – attempting to convince the visitors that they are mightier than the crime and that the good prevails; *national identity* – places that say that even though we suffered we still won eventually; *national segregation* – where you show that some people were treated differently and that the governing minority treated subordinates cruelly throughout the history; *mystical experiences* – there is something mystical about the place, and mystical comes from tragedy; *spiritual experiences* – similar to mystical, but not related to the event but rather to tragic personal experience. The concept of dark tourism is also associated with other concepts such as:

- "Battlefield" – tourism at the battlefield, i.e. visiting places related to a battlefield and/or participation in war activities (Dunkley, Morgan & Westwood, 2011, Seaton, 1996;

Young, 1993; Ryan, 2007), such as WW1 battlefields of the Somme and Ypres or Vietnam's battlefield sites.

- penal/prison tourism – tourism related to penitentiaries and prisons (Wilson, 2011, Strange & Kempa, 2003), such as Eastern State Penitentiary in Philadelphia or Kilmainham Gaol in Dublin, Ireland.
- cemetery tourism – tourism related to cemeteries (Venbrux, 2010), such as Tiwi Islands in North Australia.
- Tourism related to slavery heritage (Dann & Seaton, 2001), such as Somerset Place in North Carolina, South Carolina's Middleton Place, Cidade Velha, Cabo Verde Island of Santiago or the port city of Bagamoyo in Tanzania.
- Monument tourism – tourism related to monuments (Petr, 2015), such as Colosseum in Rome.
- Holocaust tourism - visitations to memorial sites of concentration camps, former ghettos or places related to the Holocaust in the WW2 (Stone, 2012), such as Auschwitz near Krakow, Poland, Anne Frank's house in Amsterdam, Holland, The Holocaust Memorial Berlin or Yad Vashem.
- fright tourism – thrilling events at a dark destination (Bristow & Newman, 2005), such as Dracula Park in Romania.
- genocide tourism – visitations to places where mass tragedies occurred (Beech, 2009), such as Rwanda, Cambodia or Srebrenica.
- grief tourism – visitations to a place of a special tragedy (Trotta, 2006), such as Ground Zero, New York
- disaster tourism – visitations to a place hit by disaster (Van et al., 2010; Miller, 2008), such as Chernobyl, Ukraine, New Orleans, USA or Pompeii, Italy.
- conflict heritage tourism – pertains to places where significant conflicts of individual and collective-national significance happened at different times (Mansfeld & Korman, 2015), such as sites along Israeli border areas: with Jordan, Egypt and Gaza or Belfast, North Ireland.

Thus, dark tourism and related terms are a complex phenomenon and serve for different purposes, such as political reasons, preserving remembrance, education, economic development (Chang, 2017), entertainment (Stone, 2006), and they are also a reminder of human frailty and mortality. It is believed that through the experience of dark tourism the tourist can appreciate life more and feel empathy for victims (Stone, 2013).

Research papers mostly focus on the dark tourism supply (Seaton, 1999; Stone, 2006; Farmaki, 2013), demand for experience (Farmaki, 2013; Miles, 2014) and tourists' motivation (Dunkley, Morgan & Westwood, 2011). Different views of the concept led to the categorization of sites related to dark tourism from the "lightest" to the "darkest". Starting from the most authentic sites (where death and suffering occurred), which are darker, the axis moves toward the lighter side of the spectrum. The lightest sites are "dark fun factories" (Stone, 2006) – entertaining and commercial sites related to death, such as Dracula tourism in Romania (Light, 2017). The darkest sites include sites of death characterized by greater political and ideological influence offering an educational experience (Stone, 2006), and these are sites such as camps of genocide in Cambodia and death camps from the period of Holocaust. In this respect, Miles (2002) proposes distinguishing dark sites according to their level of authenticity and compares the US Memorial Museum of Holocaust in Washington and the Museum of Holocaust in Auschwitz-Birkenau. The former is a reproduction while the latter is authentic – a space marked with death, suffering and plight.

Thus, dark tourism includes several different aspects of activities and destinations. It means that tourist behavior will differ at one from other kind of supply or destination. It is for this reason that it is important to understand tourists' motivation to be able to better predict their behavior and needs (Austin, 2002). Seaton (1996) writes that dark tourism “travels to a site completely or partially, motivated by the desire for real or symbolic encounters with death”. The weakness is that it starts from the assumption that tourists' presence at an actual site also reflects their motives. All tourists on battlefields or in Auschwitz are seen as dark tourists. This approach provides for a possibility that reasons for visiting and desired experiences could be completely devoid of any interest in death. However, several studies show that it is possible. Slade (2003), for example, suggests that Australians and New Zealanders who visit Gallipoli are involved in a deep experience of heritage and that they are not interested in death itself. In a similar vein, Teye and Timothy (2004) did not discover fascination with death and morbid experiences within their study of African Americans and others who visited sites of slavery in Ghana. Besides, while studying the Museum of Genocide Crimes in Cambodia Tuol Sleng, Hughes (2008) notes that tourists can visit something simply because it is a site “which must be seen”.

To better understand tourists' motivation, Seaton (1999) developed five categories of activities related to dark tourism based on motivation: travel motivated by witnessing death, such as public execution; travel to destinations which grew out of tragic events, such as Auschwitz; travel to internment sites or memorials, such as cemeteries and monuments; travel for re-enactment of events, such as re-enacted civil war, and travel to sites where there is evidence of the dead, such as museums. The most attractive sites in terms of motivation are authentic. Dark tourism experiences, which are affected by environmental factors and physical conditions, rouse different emotional responses in tourists (Izard & Malatesta, 1987). Thus, Tarlow (2005) established that psychocentric travelers will probably develop a nostalgic feeling during a visit to a dark tourist destination. Hence, not all dark tourists yearn for excitement and on the other hand, dark tourism does not necessarily lead to negative emotional outcomes (Fredrickson, 2003). Seaton & Lennon (2004) identified two main motives for the visitation, *schadenfreude* (pleasure derive from another person's misfortune) and meditation on death, which Seaton (1996) named *thanatopsis*. Authors claim that dark tourists often exhibit an emotional state similar to pilgrims. A visitation to such sites can therefore be a fulfilled experience for them. Motives for travel contribute to understanding tourism. Sharpley & Stone (2009) believe that dark tourism may have more to do with life and living than with death and dying. Tourists will likely also develop empathic reactions after visitations to a dark site. It should be noted that any form of a dark event from the past continues to emotionally affect people, which can then also include social and political consequences (Tarlow, 2005).

People are often fascinated with “death” and “disaster” because of emotional reversals after the experience (Yuill, 2003), and curiosity for the unknown (Lennon & Foley, 2000). Seaton (1999) concluded that tourists were attracted by sites related to the First World War and that they were motivated by the history of the time and the desire for finding out the truth. Lennon and Foley (2000) studied the case of the massacre museum and discovered that tourists have the need to understand the truth of the event and condemn the atrocity. In a study about prison tourism authors discovered that tourists are motivated by educational opportunities, learning history and curiosity for a visit to a prison (Chang, 2017). In a study of museum tourism in Lithuania, Wight and Lennon (2007) discovered that tourists were interested in learning about the country. It is obvious that educational and memorial purposes are typically motivation for dark tourism (Yuill, 2003). The war museum uses language for presenting past conflicts to tourists and triggers emotional responses of individuals who have not experienced a war personally (MacCannell, 1989; Crompton, 1979; Ryan, 2007).

3. Methodology

The paper is based on qualitative research which was conducted in the form of in-depth interviews. A total of seven interviews were conducted with makers of tourism and development policies in Srebrenica and Vukovar, as well as with tourism workers. Questions for the in-depth interview were developed based on papers presented in the theoretical section, with a focus on papers by Zaccaria, Romano and Puertas (2019), Stone (2006), Stone (2012), Wright (2014), Seaton and Lennon (2004), Stone and Sharpley (2009), Lennon and Foley (2000), Sharpley (2005), Biran and Hyde (2013) and Morison (2013).

The interviews were conducted face-to-face in Srebrenica, while interviews with respondents from the city of Vukovar were conducted over the phone. With the respondents' consent, the 60-80-minute interviews were recorded and transcribed. The research lasted for three months, in the period December 2020 – February 2021. Profile of the respondents is presented in the table below, and further in the text under codes S1, S2 and S3 for Srebrenica and V1, V2, V3, and V4 for Vukovar.

Table 1. Profile of Respondents

Organization	Respondent
Srebrenica Memorial Center	S1
Majlis of the Islamic Community in Srebrenica	S2
Municipality of Srebrenica	S3
Tourist board of the city of Vukovar	V1
Development Agency of Vukovar VURA	V2
Danubium Tours	V3
Development Agency of Vukovar-Srijem County	V4

Source: Primary research data

4. Research Results and Discussion

Tourism industry at both destinations faces many developmental challenges which lead to insufficient utilization of the available potentials. Although the destinations have numerous possibilities for development, non-systematic approach to problem solving and absence of integration and cooperation of relevant players are some of the reasons for the stagnation of development in Srebrenica and Vukovar.

4.1 Current Development of Tourism at Destinations Srebrenica and Vukovar

Until the aggression on Bosnia and Herzegovina Srebrenica was the backbone of the development of tourism in Eastern Bosnia. There are few regions in Bosnia and Herzegovina where one can find natural and anthropogenic resources with outstanding characteristics and benefits like in Srebrenica. Tourism resources significant for the development of tourism of Srebrenica include: Guber Spa, canyon of the Drina River, Perućac Lake with the coastal area of the Drina River, particularly hunting ground Sušica and hunting ground Javor (Nezirović, 2008). Until 1992, about 2,000 tourists stayed there daily in summer months. They mostly used services

of the Guber Spa, and health tourism was extremely well developed. (Informativni portal Srebrenice, 2018). Unfortunately, the fate which befell Srebrenica made it a symbol of the history of Bosnia and Herzegovina. The list of people who went missing or were killed in Srebrenica consists of 8,373 names. According to verdicts of the International Criminal Tribunal for the former Yugoslavia, what took place in Srebrenica in July 1995 is an act of genocide. The massacre that occurred in July 1995 was the single worst atrocity committed in the former Yugoslavia during the wars of the 1990s and the worst massacre that occurred in Europe since the months after World War II (ICTY, 2001). Srebrenica is a topic of numerous studies of genocide and human suffering (Honig and Both 1997; Rohde, 1998; Waller, 2002; Wagner 2008).

The dark happenings during the 1990s made tourism resources of Srebrenica invisible and it has remained unchanged until today. Unfortunately, Srebrenica as a town which suffered huge destructions has not been sufficiently rebuilt. Political situation significantly affects possibilities for investment and development of tourism. Consequently, the level of tourism development is unsatisfactory. Srebrenica is now mostly associated with genocide and Potočari Memorial Center. The genocide in Srebrenica is attracting attention of scholars and researchers, world leaders, even Hollywood celebrities. Besides local tourism organizations and agencies, foreign tourism agencies also participate in organizing war tours. A typical example is British agency Political Tours, which has so far organized several various tours in Bosnia and Herzegovina. Tourism in Srebrenica related to massacre plays an important role in the process of remembrance (Simić, 2009).

The city of Vukovar is the seat of the Vukovar-Srijem County. Until 1991 Vukovar was considered an economically developed city. Before the war, Vukovar had 28,000 employees, which is more than its present population. The city was well-known for factories Borovo and Vuteks, agricultural giant VUPIK, and had the attribute of a “city of sports, greenery and youth”. Only remains have been left from former business giants. One could say that the Vukovar-Srijem County is an example of the worst scenario which has become reality as a result of poor economic policy (Drvenkar, Banožić i Živić, 2015). Due to its location on the Danube, Vukovar has an extremely favorable position because of the pan-European Transport Corridor which goes along the Danube and thus directly connects Vukovar with European countries. It is a great strategic advantage for the development of Vukovar, which singles it out from other Croatian cities.

Vukovar can be described as a small, modern and well-organized city. Today, 30 years after war destructions, there are almost no razed houses in Vukovar. Streets have been rebuilt and many new facilities and contents have been constructed (Bradarić, 2021). During war events of 1991, Vukovar was associated with images of destruction, death and crimes. War sufferings can be related to a total of seven main sites, which constitute a firm basis for the development of dark tourism (Kesar, 2014). The Memorial Center of the Homeland War Vukovar is a central point of all activities, sites and organizations that keep the memory of the Homeland War and the tragedy of Vukovar. The center itself provides accommodation and hospitality services for visitors, and is in charge of maintenance and work of individual monuments which are managed by it (Slivkova i Buhcer, 2017). It is in charge of the following facilities: the Memorial Home “Ovčara”, the Memorial Cemetery of the Victims of Homeland War, Vukovar Hospital, Vukovar Water Tower and the “Corn Road”.

<p><i>“I am not sure if anybody in the world has the opportunity for progress such as Srebrenica has. People have an enormous interest in this place.” (S2)</i></p>	<p><i>“Vukovar is a beautiful city and offers so much. If a tourist visits all this, he/she will certainly not leave indifferent.” (V4)</i></p>
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Today, Srebrenica stagnates in terms of tourism and development, although it is a place for which people are emotionally tied, although it is a place which has a great potential and although there is an interest by local, regional and international tourists. The respondents see the political situation as the reason for it, although they see the local community as the driver of development. The huge potential is limited by the insufficiently developed infrastructure and unprofiled tourism supply, which restrict the development of tourism, including dark tourism. According to data of the Memorial Center Potočari, during the commemoration on 11 July Srebrenica is visited by almost as many as 500,000 thousand tourists. Due to the Covid-19 pandemic, even the last hostel in Srebrenica closed.

<p><i>“Last year, a group of the Dutch, friends of mine, came here. They stayed for ten days. They had nowhere to sleep. There was nothing they could buy, there was no place where they could eat. We do not have a hostel, never mind a hostel where one could have a decent breakfast.” (S1)</i></p>	<p><i>“Who loves nature, adventure, clean air, they could not find a better place than this one. We could have golden infrastructure but without a stable political situation it is unlikely that we can achieve anything.” (S3)</i></p>
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Vukovar is in a far better position in terms of the development of accommodation, hospitality and tourism supply, and activities in this direction are continuously in progress. According to data collected during the research, in 2019, over 80,000 visits were recorded with over 100,000 overnight stays in the Vukovar-Srijem County, 50% out of them in Vukovar. Tourists are primarily attracted to dark tourism (respondents from the city of Vukovar used the term 'memorial tourism'), although Vukovar also offers a broader tourism supply. Tourism supply of the city of Vukovar is profiled in terms of the development of cultural, culinary, hunting and memorial tourism, and the availability of museums. The Danube is a potential which is more actively utilized now that the supply includes a ship which sails along the Danube all year round and offers the possibility of touring Vukovar.

<p><i>“Vukovar is a city of victims and a hero city, and is well-known by memorial tourism, although it has a lot more to show. We have a problem with congress tourism because we do not have a large congress hall where annual congresses could be organized.” (V2)</i></p>	<p><i>“Every year accommodation facilities increase. We still do not have enough hotels, because people who come to congresses do not want to be accommodated at one spot. There are many small accommodation establishments, houses with suites. This year, three large restaurants have opened in the downtown.” (V3)</i></p>
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4.2 Possibilities and Directions of the Development of Dark Tourism at Destinations Srebrenica and Vukovar

Tourism is an industry which should be approached systematically. It can also be considered as extremely sensitive, and as such stability and security are necessary for its unimpeded development.

Srebrenica has a potential for an overall tourism development; however, it does not have a clear vision or a strategy for the development of tourism, and is often a subject and a topic of political turmoil. Dark tourism, and tourism in general, has a huge potential for development in Srebrenica. Thus, the respondents believe that local community is generally aware that, at the moment, it is the only way for the development of life in Srebrenica. There are certainly people who do not accept it or cannot sufficiently understand this kind of tourism. Besides infrastructure,

challenges for development include insufficiently/poorly educated staff in the tourism sector. Thus, besides the development of infrastructure and supply, activities should include education of staff and tourist guides through formal and informal training programs, particularly on the topic how to separate the aspect of a personal story and experience from the aspect of the objective past. The respondents believe that, with a good strategy, citizens should and could be far more clearly informed on benefits that development would bring to the local community.

The respondents are aware of the importance of this form of tourism in Vukovar. Examples of good practice include promotion among local population entitled “The Vukovar Nocturne”, which is organized by the Vukovar Tourist Board. This kind of promotion can be applied to the promotion among international tourists. Besides the Museum of the City of Vukovar, there are other sites which can be included in the supply of dark tourism, such as the warehouse of Velepromet company. Neither citizens nor competent institutions shy away from this form of tourism, they do not fear it since they are aware that it is dark/memorial tourism that is a link in the development of postwar and present Vukovar. However, they want to move away from this dark story, since they believe that it is developed enough and that attention should be directed toward the development of other forms of tourism.

<p><i>“Eventually, we will realize that the only thing that we can rely on is dark tourism. Dark tourism is the prospect of this city.” (S2)</i></p> <p><i>“For a long-term development of dark tourism, I would start from the local community.” (S2)</i></p> <p><i>“Nobody is trying to make some sort of economy around the Memorial Center. Infrastructure, education system (profile of staff) and work ethics are the biggest barriers in the development of dark tourism in Srebrenica.” (S1)</i></p>	<p><i>“I believe that all we now have related to memorial tourism is quite sufficient and that everything has been covered.” (V4)</i></p> <p><i>“This kind of tourism is developed here; however, it should be managed. Citizens absolutely accept this form of tourism, but one can increasingly hear voices of citizens who want us to move a bit away from it because Vukovar is not only a city of war and war happenings.” (V1)</i></p>
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The difference between the two destinations with respect to visitors' motives and emotions is that Srebrenica mostly arouses interest by international tourists and by students who conduct research on the topic of genocide in Srebrenica. Besides international tourists, a large share of visitations is accounted for by local and regional tourists. A large number of organized tours have been recorded, as well as sporadic visits of tourists for whom Srebrenica is a stopover within a tour of Bosnia and Herzegovina. As the respondents confirmed, Vukovar is mostly visited by local tourists.

<p><i>“During the year, many people come to visit Srebrenica, primarily the Memorial Center. Students come, as well as tourists within tours organized by companies.” (S3)</i></p>	<p><i>“The largest number of tourists are still local tourists.” (V3)</i></p>
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5. Conclusion

The research allowed studying the current situation of dark tourism as well as identification of challenges in its categorization and discovering potentials of dark attraction at tourist destinations. Srebrenica and Vukovar have the unique past which provides a potential for the development of dark tourism. Both destinations are characterized by a scale of suffering and media coverage, and both destinations have resources and potential to position themselves as unique destinations of dark tourism. The respondents expressed a great degree of agreement that dark tourism is one of directions of development, and the awareness of advantages and weaknesses of these sites as tourist destinations. Vukovar is already active in promoting dark tourism (or memorial tourism, as the respondents call it), while Srebrenica lags behind considerably in this respect, both in terms of orientation toward the development of dark tourism and in terms of overall development of tourism and tourism infrastructure and supra-structure. One can freely claim that the development of tourism in Srebrenica completely stagnates.

The respondents agree that there is willingness for the development of this form of tourism, since they see it as an opportunity for the prosperity of their community. Thus, conditions at the destinations should not worsen due to the development of dark tourism since its development results in the increase of possibilities for improving the quality of life in the community. Therefore, it is crucially important to raise awareness and educate population on the fact that such kind of tourism brings about an opportunity for development. Raising awareness and promotion should also result in the prevention of a repetition of such events. Makers of the policies of dark tourism development should pay a lot of attention to the promotion of destinations, particularly to online promotion, by creating an attractive and interesting content available in many languages, thus increasing visibility of the destinations. Promotion does not necessarily mean a return to war happenings and resolving political issues but rather promoting heritage and natural resources of the destination.

Besides tourism potentials, by marking the sites of suffering and indelible past, the destinations are responsible for preserving the culture of remembrance and should represent a symbol of what a society could be led to by politics and violence. Due to their war experiences, Srebrenica and Vukovar are an important element of heritage of people of Bosnia and Herzegovina and Croatia, which should be presented to international visitors. The research findings proved that both tourism destinations must work on reviving their overall supply and strive for an innovative approach to development. With a quality development strategy, development of tourism can attract local and foreign investment. Good world practices should be used as a basis for the development of dark tourism. The respondents point out that no tourism destination can reach its climax without cooperation between local community, private sector, education system and public, which is in line with what was implied by Kunst and Živoder (2015) – a successful development of the overall supply of dark tourism products implies a multi-dimensional approach, mostly in the selection of topics and their interpretation. It is therefore necessary to carefully design an approach to the development of dark tourism and put in in the context of the civilizational continuity of life at these destinations.

The loadstar for undertaking certain activities can also be taken from a thought by authors Tunbridge and Ashworth (1952), who see the entrepreneurial activity as crucial for the evolution of war scars at tourist sites. The authors record that heritage theoreticians believe that dark sites can be specially “marketed” if they are notorious, particularly cruel, if the historical regime was evidently unjust or if those who suffered were well-known or particularly likable victims. There is no doubt that many places in the former Yugoslavia fit into their definition of what a final “sales point of death”, including Srebrenica and Vukovar, contains. At these sites, many people have experienced suffering and the sites attracted a great attention of world media. Dark tourism

products are multifaceted, multilayered and exist in a variety of social, cultural, geographical and political contexts (Stone 2006, u: Stone, Sharpley, 2008).

Dark tourism is doubtlessly gaining significance in the overall tourism industry and one can observe an increasing trend of tourists' interest in it. According to Stone (2006, in: Farmaki, 2013), no analysis of dark tourism supply can be complete if tourist demand is not acknowledged. Since dark tourism is primarily a behavioral concept, it is fundamental to study tourist motives. Besides, dark tourism supply can also be spurred by factors which are not primarily associated with death and suffering. Therefore, it has been proposed that tourism markets should be segmented taking into account the fact that not all tourists who visit a dark site are motivated by the interest in death and that not all tourists have the same experience. Demand for dark tourism products is doubtlessly diverse and fragmented, which indicates a need for further empirical and theoretical analysis (Drvenkar, Banožić i Živić, 2015). It opens a space for future research in this field. It can also pertain to designing a template which will identify and determine development possibilities of a destination which is related to death and suffering. This research could be upgraded by including a larger number of respondents from the private, public and non-governmental sector, and particularly by conducting a qualitative and quantitative research among population at the destinations.

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THE IMPORTANCE OF KNOWLEDGE AND INFORMATION SHARING IN TALENT MANAGEMENT PROCESS IN COMPANIES

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Abstract

Workplace is experiencing a significant changes. One of the most important things that a company has to take care of is the way how it communicates with its employees. Observing the importance of internal communication in the companies, few things appear to be an important components of its success. Besides the managers as a communication drivers, and different channels for transmission, this paper is giving a special focus on role of knowledge and information sharing. Therefore, the aim of this research is to investigate to what extent knowledge and information sharing, as one of the important components of internal communication, impacts attracting, developing and retaining talent in companies. The empirical research was conducted on a sample of 170 companies that belonged to the category of medium-sized or large companies in the Federation of Bosnia and Herzegovina. The basic assumption was that knowledge and information sharing has an impact on talent management in companies, in that improvements in knowledge and information sharing can be recognized by existing employees, and through them by potential talent in the market who are still considering where to work. The empirical part of the research used methods that included primary data collection through a research questionnaire, and various statistical methods for processing the collected data. The summary of the responses given by the managers of these companies confirmed that vertical communication did have a positive impact on the talent management process. The summary of the responses given by the managers of these companies confirmed that knowledge and information sharing did have a positive impact on the talent management process in terms of attraction and retention, but limited connection with development of talents. This result opens new research questions and opportunities in the field of knowledge sharing methods. Recommendations for further research would be in the direction of a wider range of employees and to include certain quantitative indicators.

Keywords: internal communication, knowledge sharing, informal communication, transparency, talent management

1. INTRODUCTION

Talents are demanding group, expecting from the company to give them a good reason to work and stay there. Only those employees who trust their company can be its ambassadors. To gain trust, companies need to make sure that important and necessary information are prompt, clear and delivered to employees who need it. This will lead to aligned interests and values that the company and talents offer to each other. For the purposes of this work, knowledge management is viewed through the prism of communication and the way in which knowledge is transferred within the company. Employee communication does not only take place in the company, but

communication is also transferred to their external contacts, family or friends, where attitudes, opinions and comments are shared (Šuletnić et al., 2017; Skoko, 2006). Family and friends expect an employee of a company to have certain information, to be able to explain some issues or products, and to give them their opinion. In this way, employees have an influence on others and indirectly present the company they work for to the external public.

According to research conducted by Men (2014), the results showed that organizations that share meaningful information with employees and involve them in the business encourage employee satisfaction, increase their engagement and ultimately lead to employees being advocates of the company and brand. In the area of transparency, it is important to ensure the correct way and amount of information to employees, since "revealing too much information without accompanying explanation and filtering can lead to confusion rather than clarification" (Yue et al., 2019, pp. 5). Therefore, "when employees do not receive enough information through formal channels, they rely on informal channels" (Gray and Laidlaw, 2002, pp. 221), which is actually a sign of dysfunctional organizational communication, and informal channels become extremely important for the overall organizational climate.

Sharing of knowledge contributes to the success of the company in numerous ways, some of them are increased socialization and trust, i.e. better team atmosphere in the company (Farhan and Muhaimin, 2019). Tafrá-Vlahović (2012, pp. 165) emphasizes that "people want to know what needs to be done, they want to understand why it is important, feel committed to achieving the goal and have the opportunity to use their own knowledge and skills to do it as well as possible". The exchange of information or employee knowledge achieves an even more important role in crisis situations, as it ensures speed and efficiency (Kim and Rhee, 2011). Thus, for example, rewards stood out as the main external motivators for employees (Bartol and Srivastava, 2002), and helping others and self-education stood out as internal employee motivations (Reinholt et al., 2011). In previous research that dealt with the importance of knowledge sharing in the organization, it was concluded that it affects the increased ability of companies to innovate (Chen et al., 2010), leads to better results (Mesmer-Magnus and DeChurch, 2009), increased competitive advantage (Jackson et al., 2006), makes better use of resources (Cabrera and Cabrera, 2005; Damodaran and Olphert, 2000) and reduces learning effort (Hansen, 2002).

As the basic principles of successful business communication, Lamza-Maronić and Glavaš (2008, pp. 21) state the principle of clarity, the principle of conciseness, the principle of limitation, the principle of accuracy, and the principle of design. Men and Stacks (2013) advocate responsible, participatory and meaningful transparency in organizations.

When something goes wrong in business, transparent companies don't try to hide it. Instead, they are upfront about the issue. Transparency in the workplace involves the free exchange of information in an effort to benefit the organization and its people. Knowledge is power, and the lesson to be embraced is that transparency, truth and openness spread knowledge that empowers people and companies to work better together. Therefore, "open communication creates a positive organizational climate and a stimulating work environment" (Skoko and Mihovilović, 2014, pp. 89).

Due to its nature, informal communication can improve productivity throughout the organization as work-related issues are discussed and resolved quickly. Targeted organization of informal communication enables conversations to build trust. This can be more effective than relying on chance encounters in a physical office. Informal communication cancels the positioning of employees within the organizational structure and connects the members of the organization in all

directions (Mikić, 2010). The results of research that dealt with the effect of different communication channels on the creation of a corporate brand image among potential employees (First and Tomić, 2011) show that more than three quarters of potential employees learn about the company through informal communication channels.

Just as adequate and effective communication can lead to strengthening a positive work environment and increasing employee engagement, poor quality communication can create major problems for the entire organization. This is especially reflected in crisis communication or in the lack of official flow of information. In such cases, communication is reduced to rumours and space for creating one's own ideas about something that is not known well enough, and in this way can significantly damage relations in the company and cause a reputational risk. Dysfunctional communication is opening up more and more space with the development of digital communication channels, such as social networks. It is necessary to establish a good control by the management, with the fact that it should not be considered as a restriction or constant supervision under which it is not allowed to communicate honestly. According to Guffy et al. (2005), informal communication is considered a useful tool for management guidance given that it provides essential information about employee morale and problems that can easily determine what to do.

Recruiting the best candidates is essential for all companies interested in increasing their bottom line. Attraction of talent is truly a global and important issue, followed by demographic changes which are becoming more and more pronounced. It is important for every company what kind of image it presents to the public, because the goal is to leave exactly the impression of the kind of talent it wants to attract (Bouchikhi and Kimberly, 2008; Lievens et al., 2007). The entire process of attracting talent begins with the process of planning goals and necessary competencies for the required position. In this paper, the talent management process is observed and measured in empirical research through three steps: attracting, developing and retaining talent. This structure of the process is in line with the theoretical understanding of numerous authors that talent management is a deliberate and structured corporate approach to recruiting, retaining and developing talented individuals within an organization (Stahl et al., 2007; Tarique and Schuler, 2010; Davis et al., 2016).

The results of the empirical research that will be carried out will allow a better understanding of the relationship between knowledge and information sharing and how it affects talent management in companies, in terms of the relationship between each individual dependent and independent sub variable. It will provide a better understanding of market relations for companies and how they shape human resources management strategies and communication strategies.

2. OVERVIEW OF HYPOTHESIS

The model is based on the basic assumption that knowledge and information sharing in a company has a positive impact on talent management. The research paper has postulated three hypotheses, which will be investigated and empirically proven.

H1: Knowledge and information sharing in a company has a positive impact on talent attraction.

H2: Knowledge and information sharing in a company has a positive impact on talent development.

H3: Knowledge and information sharing in a company has a positive impact on talent retention.

The expected *connection between knowledge and information sharing and attracting talents* is based on previous studies which have argued that timely and transparent communication is contributing to a better understanding and acceptance of internal organizational activities that can improve the organization's reputation (Šulentić et al., 2017, 56). According to Kim and Rhee (2011), when employees perceive that they have quality relationships with their company, they tend to act as advocates for their company. The important influence of employees on the reputation is also confirmed in research of different authors (Van Riel and Fombrun, 2007; Dotok, 2006) which have argued that the successful reputation is not manageable if employees do not believe in and do not express the company's shared values.

The expected *connection between knowledge and information sharing and talent development* is based on previous studies which have argued that "workplaces that offer opportunities for growth make it easier for employers to attract and retain employees. It is important for modern organizations to retain talent in order to become efficient and effective" (Sokro, 2012, 170). Feedback and evaluations are among the main talent development practices that have been studied in various publications (e.g. D'Amato and Hannum, 2009; Garavan et al., 2012; Lawrence, 2015; Pruis, 2011; Watt, 2012). Numerous authors (Pounsford, 2007; Sundin et al., 2018; Gill, 2011) confirmed in their research that communication strategies such as storytelling and informal communication led to greater employee engagement, as well as to an increased level of trust in the organization, and what ultimately results in increased revenue as a result of customer satisfaction.

The expected *connection between knowledge and information sharing and talent retention* is based on previous studies which have argued that providing timely, high-quality and adequate information develops trust and increases employee loyalty to the organization (Thomas et al., 2009). Since learning and development opportunities appear to be crucial for retaining talented employees (Arnold, 2005; Echols, 2007; Herman, 2005; Hiltrop, 1999; Hytter, 2007; Michaels et al., 2001; Rodriguez, 2008; Walker, 2001), the organization must provide a stimulating climate for sharing knowledge and teamwork and thereby create an environment of a learning organization in which employees can achieve development and advancement.

3. RESEARCH INSTRUMENT AND METHODS

The research sample included 170 companies operating in the Federation of Bosnia and Herzegovina, which by size belonged to the group of large or medium-sized companies. Only one manager in each company responded to the questionnaire. The empirical research for this paper was based on a detailed, self-prepared questionnaire. The survey questionnaire was constructed using previous empirical and theoretical research conducted in the field of vertical communication and talent management. The questionnaire included several questions from previous research (Men, 2012; Behnke, 2010; Hayase and Kalani, 2009; van Zyl et al., 2017; Stahl et al., 2007), comprising just small part of the overall list of questions in the research. Data collection for the research was carried out in the second half of 2021. With the help of a market research agency, the responses to the questionnaire were collected via telephone conversations with respondents. Considering the large number of questions, approximately 30 minutes were needed to collect all the necessary responses for each interview with company management. The total duration of data collection was one month. For each indicator in the survey, the answers to the questions were defined as closed type with the application of a Likert scale with 5 degrees of intensity according to the following interpretation: 1 - not at all to 5 - completely.

The variable "knowledge and information sharing" is measured by three indicators: "transparency in sharing information", "informal communication" and "knowledge sharing" with a total of 16 statements. The variable "talent attraction" in the company is measured by three indicators: talent identification, employer brand, and talent attraction methods and techniques, with a total of 18 statements. The variable "talent development" in the company is measured by two indicators: performance and motivation management and the types of education provided by the company, with a total of 17 statements. The variable "talent retention" in the company is measured using five indicators: rewards and recognition, modern work design, balance between work and private life, management support, employer's reputation, with a total of 20 statements. The Cronbach alpha reliability coefficient, for statements from each variable expressing knowledge and information sharing, talent attraction, talent development and retention, is > 0.7 , which means that all these statements can be aggregated into each individual variable to which it is assigned.

The empirical research used different statistical methods to process the collected data: graphical representations, descriptive statistics, structural analysis, the Kolmogorov-Smirnov test to verify whether the distribution of the analysed variable meets the assumption of normality, the Mann-Whitney U test for two independent distribution samples that do not meet the assumption of normality, the Kruskal-Wallis test for more than two independent distribution samples that do not meet the assumption of normality, correlation analysis, and hierarchical multiple regression models.

4. INTERPRETATION OF RESULT

When observing the results of this research in the context of sample and the industry to which the company belongs, the largest share of companies was engaged in the processing industry (28.2%), followed by companies engaged in wholesale and retail trade (25%) and construction (11%), which corresponds to the industrial structure of companies at the level of the Federation of Bosnia and Herzegovina. According to the gender structure of managers, the results showed a relatively evenly distributed sample. There is a slightly higher proportion of female managers (58%), which gives the selected sample representativeness in the context of gender structure. Managers in the companies that responded to the questionnaire were at the level of lower, middle or top management in the proportion 7:46:47. The age structure of respondents/managers from the sample was also heterogeneous. The managers were predominantly from the age group of 25 to 39 (55%), which is an interesting category because this age group corresponds to the Millennial generation. The variable of seniority that the managers acquired in their respective company was also analyzed. The sample was heterogeneous in terms of its structure, with the highest proportion of managers working in the company for 10 years or more (43%), while the lowest proportion were those who have been in the company for up to one year (6%).

The Mann-Whitney non-parametric test was used to test differences between male and female managers regarding knowledge and information sharing, talent attraction, development and retention. The Kruskal-Wallis non-parametric test was used to test the differences between managers of different age groups, different positions of managers and different seniority of managers regarding attitude to vertical communication, attraction, development and retention of talent.

- The results of the conducted research showed that there was no statistically significant difference between the mean values for the variables that express **knowledge and information sharing** in the subsamples according to gender (p -value $0.36 > 0.05$) and position of the manager (p -values $0.56 > 0.05$). The attitude to knowledge and information sharing partially depended on age (p -values $0.019 < 0.05$), as the p -value was less than 0.05 only for the variable "knowledge sharing". Finally, in terms of the seniority of the manager (p -value $0.195 < 0.05$),

the results confirmed that the attitude to knowledge and information sharing do not depend on the seniority of the manager in the company

- For the **talent attraction** variable, the results showed that the attitude towards talent attraction partially depended on age (p-value $0.057 < 0.05$), where only one construct "activities undertaken by the company in terms of methods and techniques of talent attraction" had a p-value lower than 0.05, and seniority of the manager (p-value $0.328 > 0.05$), where only one construct "activities undertaken by the company in the field of employer brand development" had a p-value lower than 0.05. There was no statistically significant difference between gender (p-value $0.873 > 0.05$) and position (p-value $0.58 > 0.05$)
- For the **talent development** variable, the results of the conducted research showed that there was no statistically significant difference between the mean values for the variables that express the development of talents according to gender (p-value $0.268 > 0.05$), age (p-value $0.698 > 0.05$), seniority (p-value $0.766 > 0.05$), or manager's position (p-value $0.57 > 0.05$)
- For the variable **talent retention**, the research results showed that there was no statistically significant difference between the mean values for the variables that express talent retention according to gender (p-value $0.202 > 0.05$), age (p-value $0.254 > 0.05$), seniority (p-value $0.237 > 0.05$), position of the manager (p-value $0.816 > 0.05$).

For the constructs that express knowledge and information sharing and talent management, the factors were calculated by applying exploratory factor analysis (Principal Axes, method with oblique rotation) to the original statements from the questionnaire that related to these constructs were taken.

For the constructs that express knowledge and information sharing and talent management, the factors obtained by applying exploratory factor analysis (Principal Axes, method with oblique rotation) to the original statements from the questionnaire that related to these constructs were USED. KMO measures and the sphericity test justify the obtained models (KMO > 0.7 and p-values of the sphericity test less than 0.05).

- a) For 16 initial statements related to information and knowledge sharing, two factors were extracted, with the first taking more than 40% (precisely 44.983%) of the total, the variability and scores of the first factor were taken as the construct for information and knowledge sharing.
- b) For the 18 initial statements related to talent attraction, four factors were extracted, with the first one taking more than 35% (precisely 35.744%) of the total, the variability and scores of the first factor were taken as a construct for talent attraction.
- c) For 17 initial statements related to talent development, three factors were singled out, with the first one taking almost 40% (precisely 39.506%) of the total, the variability and scores of the first factor were taken as a construct for talent development
- d) For the 20 initial statements related to talent retention, two factors were extracted, with the first taking almost 50% (precisely 49.595%) of the total, the variability and scores of the first factor were taken as the talent retention construct.

In order to present the results of this research, a correlation matrix was created, which shows the connection between knowledge and information sharing and talent management, the factors were calculated by applying exploratory factor analysis as an independent variable and talent management in the company as a dependent variable.

Table 1: Correlation matrix

		Attracting talent	Development talent	Retention talent
Information and knowledge sharing	Partial correlation coefficient	0.161**	-0.011	0.252***
	P-vrijednost	0.037	0.888	0.001

(*p < 0.1, **p < 0.05, ***p < 0.01)

Source: Research results

According to the results presented in Table 1, it can be concluded that:

- There is a statistically significant connection between sharing information and knowledge and attracting talent (partial correlation coefficient is 0.161)
- There is no statistically significant connection between the sharing of information and knowledge and talent development (partial correlation coefficient is -0.001)
- There is a statistically significant connection between the sharing of information and knowledge and the development of talents (partial correlation coefficient is 0.252)

The variables were further modelled using hierarchical regression analysis. Dummy variables for the socio-demographic characteristics of the respondents were included as control variables (gender – dummy variable 1 for female and 0 for male; age – dummy variable 1 for managers aged up to 39 and 0 for managers aged 40 or more; seniority – dummy variable 1 for managers with up to 9 years of experience and 0 for managers with 10 or more years of experience; manager position – dummy variable 1 for top management and 0 for middle and lower management). In subsequent blocks, in the model in which the constructs for talent management were considered dependent variables, an independent variable – the constructs "averages for knowledge and information sharing" was gradually included. Demographic characteristics were not significant in any model.

Table 2: Hierarchical regression analysis – Attracting talent as a dependent variable

Model	Attracting talent (factors)			
	1	2	3	4
Constant	-0.254	-0.27	-0.257	-0.232
Gender <i>dummy</i>	-0.051	0.054	0.059	0.062
Age <i>dummy</i>	0.225	0.254	0.199	0.114
Seniority <i>dummy</i>	0.13	-0.018	0.077	0.086
Position <i>dummy</i>	0.252	0.209	0.185	0.228
Information and knowledge sharing (average)			0.352***	0.142**
R ²	0.034	0.335	0.418	0.562
ΔR ²	/	0.301	0.083	0.144

(*p < 0.1, **p < 0.05, ***p < 0.01)

Source: Research results

In the regression analysis for the dependent variable "talent attraction" presented in Table 2, it can be concluded that knowledge and information sharing achieved a statistically significant connection with talent attraction. Based on the results, it can be concluded that hypotheses H1 has been confirmed.

Table 3: Hierarchical regression analysis – Talent development as a dependent variable

Model	Development talent (factors)			
	1	2	3	4
Constant	-0.059	-0.068	-0.061	-0.037
Gender <i>dummy</i>	-0.22	-0.162	-0.159	-0.156
Age <i>dummy</i>	0.306	0.322	0.292	0.211
Seniority <i>dummy</i>	0.11	0.029	0.081	0.09
Position <i>dummy</i>	-0.046	-0.07	-0.083	-0.043
Information and knowledge sharing (average)			0.194**	-0.005
R ²	0.042	0.134	0.159	0.289
ΔR ²	/	0.092	0.025	0.13

(*p < 0.1, **p < 0.05, ***p < 0.01)

Source: Research results

In the regression analysis for the dependent variable "talent development" presented in Table 3, it can be concluded that knowledge and information sharing the connection is not statistically significant with a partial correlation coefficient of -0.011 with talent development. Based on the results, it can be concluded that hypotheses H2 has not been confirmed.

Table 4: Hierarchical regression analysis – Talent retention as a dependent variable

Model	Retention talent (factors)			
	1	2	3	4
Constant	-0.13	-0.147	-0.134	-0.119
Gender <i>dummy</i>	-0.144	-0.027	-0.021	-0.02
Age <i>dummy</i>	0.057	0.09	0.034	-0.016
Seniority <i>dummy</i>	0.262	0.097	0.195	0.2
Position <i>dummy</i>	0.228	0.18	0.155	0.179
Information and knowledge sharing (average)			0.363***	0.242***
R ²	0.031	0.407	0.495	0.543
ΔR ²	/	0.376	0.088	0.048

(*p < 0.1, **p < 0.05, ***p < 0.01)

Source: Research results

According to results of the regression analysis for the dependent variable "talent retention" presented in Table 4, it can be concluded that knowledge and information sharing achieved a statistically significant connection with talent attraction. Based on the results, it can be concluded that hypotheses H3 has been confirmed.

H1: There is a relationship between knowledge and information sharing and talent attraction, **assumes that there is a positive relationship between knowledge and information sharing and talent attraction in the company.** Through the correlation model obtained as variable

factors, the connection is statistically significant with a partial correlation coefficient of 0.161. Also, according to hierarchical regression models as factor variables, vertical communication also showed a significant association with talent attraction (p with vertical communication less than 0.01). This hypothesis confirms the expectation that trust and credibility among employees is created through knowledge sharing, transparency and adequate informal communication. Their better understanding of the organization contributes to employees becoming advocates for their company and making it attractive to new talent. Therefore, with the increase in the development of internal communication in the area of sharing knowledge and information, the attractiveness of the company as an employer for talent also increases.

H2: There is a relationship **between knowledge and information sharing and talent development**, it assumes that there is a positive relationship between knowledge and information sharing and talent development in the company. Through the correlation model obtained as variable factors, the connection is not statistically significant with a partial correlation coefficient of -0.011. Also, according to the hierarchical regression models, knowledge and information sharing did not show a significant relationship with the attraction of talent, observing both previously mentioned models. The initial assumption was that the sharing of information and knowledge achieves a connection with employee development, considering that in previous research it was shown that workplaces that offer opportunities for growth facilitate the attraction and retention of employees (Sokro, 2012), that feedback and evaluations among the main talent development practices studied in various publications (e.g. D'Amato and Hannum, 2009; Garavan et al., 2012; Lawrence, 2015; Pruis, 2011; Watt, 2012), and that informal communications lead to greater engagement employees (Pounsford, 2007; Sundin et al., 2018; Gill, 2011).

However, considering this result, the options mentioned in the research of Gagné et al. (2019) in the field of organizational behaviour provided three key findings: people share and hide knowledge for different reasons, they are more motivated to share when they work in a cognitively demanding job and have a lot of autonomy, they are more likely to hide knowledge if they think that colleagues they rely too much on them. People often prioritize their own tasks over sharing knowledge, so they even pretended not to have the requested information. At the same time, knowledge sharing will increase when team leaders recognize individuals for their contribution of ideas and information, because knowledge sharing does not happen automatically in a team, there must be great support and direction from managers (Srivastava et al., 2006).

It is an interesting fact that all respondents of this research are in managerial positions, which would mean that the managers do not see the importance of the information given to them as useful for their development in the company. Given that the sharing of information and knowledge was associated with the attraction and retention of talent in both statistical methods (average and factors), obviously the reason and space for further analysis lies in the application of acquired knowledge for the desired personal career development. The reasons for this can be: insufficient use of the acquired knowledge on the correct tasks and projects, insufficiently good career guidance, and insufficient use of the development programs that are listed as part of the talent management process in this questionnaire.

By reviewing the correlations for the connections of these two main constructs - information and knowledge sharing and talent development, a low level of correlations (less than 0.4) was recorded for the intensity of use of the types of education offered by the company with any of the sub-constructs of knowledge and information sharing. From this, it could be concluded that transparency, informal communication and sharing of knowledge do not achieve a connection

with the types of education that should be represented in the company as a development support for talents (mentoring, coaching, project assignments, job rotations and other types of training and education). This could also be interpreted in the way that nurturing a culture of learning that permeates the sharing of knowledge and information is not adequately reflected in the types of education provided to employees, specifically in this case - managers. The question of the types of educations that are used in companies for the adequate and concrete development of managers and their career plans opens up.

H3: There is a connection **between knowledge and information sharing and talent retention**, it assumes that there is a positive relationship between knowledge and information sharing and talent retention in the company. Through the correlation model obtained as variable factors, the connection is statistically significant with a partial correlation coefficient of 0.252. According to hierarchical regression models, knowledge and information sharing factors as variables showed a significant relationship with talent retention (p with vertical communication less than 0.01). A positive relationship was expected in view of previous research that showed that knowledge sharing and teamwork affect employee satisfaction, thus creating a favourable environment in the organization that is motivating for talents and increases their loyalty to the company where they work. Therefore, with the increase in the development of internal communication in the part of sharing knowledge and information, the role of the company as an employer that knows how to retain talent and create a long-term relationship with employees grows.

5. CONCLUSION

In business operations, communication is extremely important and a prerequisite for achieving goals. Without timely and adequate transmission of messages and information, there is a stoppage of business, misunderstandings and potential loss for the company. Therefore, successful communication becomes the leading need of modern management. In an analysis of articles published in nine scientific journals from 1970 to 2019 by Lee and Yue (2020), the results showed that internal communication research has increased exponentially with a particular emphasis since 2012, suggesting that internal communication research became an important research topic in the field of public relations. How important knowledge management is in an organization is shown by the fact that there is a very special discipline called "knowledge management". The main goal of knowledge management is to improve organizational efficiency and preserve knowledge within the company. It consists of a cycle of creating, sharing, structuring and revising knowledge in order to increase the effectiveness of the organization's collective knowledge. The goal is to enable organizational learning and create a culture of learning, while encouraging the exchange of knowledge. Through the participatory process, companies can clearly identify the needs of employees and deliver appropriate, useful and relevant information to their employees (Jiang and Men, 2017). According to Vokić and Bego (2012, pp. 164), talent management means "responding to the challenges of acquiring and retaining employees with high competencies and enabling these employees to achieve outstanding work results, develop and advance in the organization". The interpretation of Kolaković (2003, pp. 926) is that "people's brains, and no longer their hands, have become the most important element for the growth and development of companies. Capable employees who develop new ideas, create value and innovate company operations have become a key asset of the new economy".

Empirical research was conducted on a sample of 170 companies that belong to the category of medium-sized or large companies in the Federation of Bosnia and Herzegovina. The summary of

the responses given by the managers of these companies confirmed that knowledge and information sharing as an independent variable and talent management as a dependent variable had a partially positive impact. The positive connection is confirmed between knowledge and sharing management and talent attraction and retention, while the connection with talent development has not been confirmed. The results open a new research question related to the types of educations that are used in companies for the adequate and concrete development of managers and their career plans. Nevertheless. The positive connection with attraction and retention is pointing to a fact that when a company develops and strengthens its knowledge and information sharing in their everyday business it positively impacts employer's brand and becomes an attractive place for work.

The results obtained in this empirical research largely support the guidelines indicated by previous studies, but it was not possible to find any previous confirmation in companies from the Federation of Bosnia and Herzegovina. In a theoretical sense, this paper allows for the possibility to implement the conceptual model in new research and use the results for comparison and reaching new conclusions; the results of this research study can be added to previous theoretical knowledge.

A limitation of the study is that the research was applied only to companies that have their headquarters in the Federation of Bosnia and Herzegovina, and consequently they do not include the entire economy of the country, but only of one entity within Bosnia and Herzegovina. The subjectivity of the respondents should also be mentioned, since all the questions on the questionnaire were answered by employees who were in a managerial position. The research did not deal with quantitative indicators that would be able to check the true success rate of the talent management program, and the responses were based solely on the subjective opinion of the respondent, in this case the manager.

Recommendations for future research would be to broaden the scope of the research on attitudes to this topic by including employees and not only managers. It would also be interesting to try to determine exactly to what extent the perception of employees influences potential job seekers from the external environment (students, users of employment offices, etc.). In future research, it would be useful to include certain quantitative indicators that would confirm the success of talent management strategies in companies, and even perhaps direct the research to those sectors in which the talent management process is most developed, so that the results and examples are as concrete as possible.

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THE APPROACH TO REDUCING THE ECONOMIC CONSEQUENCES OF HIGHER EDUCATION ATTRITION IN BOSNIA AND HERZEGOVINA

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Abstract

Among the challenges facing the economy of Bosnia and Herzegovina is the waste of resources and growing costs of higher education attrition. This phenomenon has the multi-dimensional consequences to countries development, society, higher education institutions, and individuals. The purpose of this paper is to propose an early warning system based on artificial intelligence that identify students at risk of dropping out of higher education institutions even before student know that he/she will drop out, and reduce the economic consequences of students outflow. We employed decision tree algorithm (Histogram Gradient Boosting Classifier) to identify dropout students using the University database. The data set collected at the publicly funded University of Banja Luka, from 2014/15 up to 2018/19 school year, contain the data of 1.267 students from the Faculty of Economics, and data of their exam terms during the first semester within enrollment. We identified 48% of dropout students within 5 years of collected data using cross-section and the true-cohort method. Exploratory data analysis, data preparation, and model building are implemented in Python. Evaluation metrics, accuracy, ROC AUC, precision, recall and confusion matrix are reported and discussed. (**Ongoing:** The accuracy of our dropout prediction model is ___ percentage. Additionally we tried to estimate the cost of university outflow for the university and individuals, using the tuition fees, and cost of living...)

Keywords: dropout, higher education, machine learning, attrition cost, education cost

JEL classification: I21

THE IMPACT OF CREDIT RISK ON THE PROFITABILITY OF COMMERCIAL BANKS IN BOSNIA AND HERZEGOVINA

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Abstract

Profitability represents "sine qua non" condition that determines market survival and business success in an uncertain global environment. Maximizing the welfare of owners, primarily through increasing value, is determined by profitability but also by the degree of exposure to financial risks. Credit operations are the basic and most important segment of banks' operations, which explains the fact that credit risk is the most important risk to which the banking sector as a whole is exposed, while emphasizing the importance of continuous and adequate management of this type of risk. Over time, bank risk management has become constituent part of integral business dealings of banks and one of strategic functions of bank management. The main objective of this paper is to examine the impact of credit risk (CR) on the profitability of banks operating in Bosnia and Herzegovina measured by ROA and ROE. For the purposes of the analysis, the following credit risk determinants were used: Total loans and advances to deposit ratio; Ratio of total bank debt and total assets; Non-performing loans ratio; Capital adequacy ratio. Data on the aforementioned indicators were collected from public annual publications, financial and audit reports for 24 commercial banks operating in the territory of Bosnia and Herzegovina for the period 2015-2021. Empirical data analysis was performed using an appropriate descriptive and inferential statistics, and a multiple linear regression model.

The results of the analysis showed that credit risk (measured by the Non-performing loans ratio) has a negative and significant impact on ROA and ROE, while other credit risk determinants (Total loans and advances to deposit ratio; Ratio of total bank debt and total assets; Capital adequacy ratio) are not significant, and their impact on the profitability of banks expressed by ROA and ROE indicators is mostly imperceptible. Based on this research, on the one hand, macroeconomic policy makers will be able to improve financial stability and the quality of the banking sector in BiH, while on the other hand, business decision makers will be able to better evaluate the relationship between risk and return of their business activities.

Key words: credit risk determinants, profitability, commercial banks, Bosnia and Herzegovina, multiple linear regression

JEL: G3, G32, C4, C83

1. Introduction

Rose and Hudgins (2015) define credit risk as the risk of the borrower's ability and willingness to settle its credit obligations to the bank within a precisely defined period and according to precisely determined and defined conditions. From this definition it can be concluded that credit risk has two sources: the borrower's subjective willingness to respond to all obligations arising from the contract signed with the bank and the borrower's objective willingness to repay liabilities to the bank from income or another source acceptable to the bank.

The possibility that banks, due to their carelessness, or due to excessive "appetites" or achieving short-term business goals, neglecting the issue of adequate risk management and thus causing a decline in the confidence of market participants, which would ultimately lead to systemic instability, required regulation the issue of risk management.

Initially, this regulation was based exclusively on national standards, but due to the globalization of banking operations, there has been a standardized approach to risk assessment that occurs at the international level. Thus, at the end of the 1980s, the first international standard was formulated by the Basel Committee on Banking Supervision, known as the Basel I standard, which refers to the calculation of risk-weighted assets of banks and the calculation of capital adequacy. Gathering new experiences in risk management, in the mid-90s of the last century and early 2000s, a new international standard was published - Basel II standard, which was later modified and changed to Basel

2.5 standard. The last formulated international standard Basel III was published in 2010 in response to the global economic crisis in 2007, the main goal of its creation is to create a resilient banking system that can more effectively respond to new financial shocks and economic crises.

1.1. The Performance of Banking Sector in Bosnia and Herzegovina

The financial system in BiH is bank-centric. There are currently a total of 24 commercial banks operating in Bosnia and Herzegovina that are officially registered with the CBBH, of which 8 are based in the Republika Srpska and 16 are based in the Federation of Bosnia and Herzegovina. With the transition process in Bosnia and Herzegovina, consolidation in the banking system has also begun, which includes operations related to the elimination of bad loans approved before 1990, and work on improving capital adequacy.

The negative consequences of the Covid-19 pandemic, which are reflected in the limited movement of people, goods and services, and increased risk and uncertainty, led to a decline in economic activities, which ultimately had a significant impact on the banking sector. Measures to mitigate the negative consequences in the form of approved moratoriums on the repayment of overdue liabilities, and other special measures of companies by the entity authorities have had the effect of mitigating the negative consequences caused by the pandemic, as well as reducing their spillovers to financial institutions. Due to low demand for loans, but also the tightening of credit standards in the business policies of banks, there was a lack of credit growth in 2020. Nevertheless, in the observed period, despite the unfavorable circumstances that marked 2020, the banking sector managed to improve almost all financial health indicators, as evidenced by the fact that, according to the latest Financial Stability Report of the Central Bank of Bosnia and

Herzegovina for 2020. year, the banking sector in Bosnia and Herzegovina was adequately capitalized, the quality of asset was improved, and significant liquidity was preserved.

The assessment of the stability indicators of the banking sector in 2020 shows that the banking sector in 2020 is stable, adequately capitalized, highly liquid, and that, despite a significant decrease in profitability, it has increased its resilience to risks. With the exception of the profitability segment, in which the score was significantly reduced in 2020, an improvement in stability indicators was recorded in all other segments.

According to the report of the Central Bank of Bosnia and Herzegovina on financial stability for 2020, due to the increase of regulatory capital and the application of new regulatory regulations, and the reduction of total risk exposure in 2020, the capitalization indicators in the banking sector improved, thus increasing absorption capacity for possible shocks, which in the new circumstances of the Covid-19 pandemic and its negative consequences is extremely important, since in this way it contributes to preserving the stability of the banking sector in BiH.

The downward trend in the share of non-performing loans in total loans affected the improvement of the loan portfolio, which ultimately led to an improvement in the assessment in the asset quality segment. High scores in the liquidity segment, and especially in the foreign exchange position segment, show that the banking sector is still highly liquid, and that foreign exchange risk is still minimal thanks to the "currency board".

Due to the continuous decrease in the share of indexed loans in foreign currencies in total loans, in 2020 there was also an increase in the score in the foreign exchange position segment. Share capital according to the total amount of risk exposure and regulatory capital according to the total amount of risk exposure amounted to 18.1% and 19.2% at the end of 2020, respectively, while the leverage rate was 10.19%. The growth of regulatory capital in 2020 was recorded in the amount of KM 50.3 million or 1.4% compared to the period in 2019, while the share capital was simultaneously reduced by the same percentage. The lower value of share capital was also affected by the higher amount of reported losses in one bank, so that based on these data obtained from the financial statements from 2020, it can be concluded that all banks except one bank in the banking sector meet regulatory requirements concerning capital adequacy and leverage rates.

The net profit realized by the banking sector of Bosnia and Herzegovina amounted to 227.1 million KM, which is lower than the same period in 2019 by as much as 38.7%. The decline in the banking sector's profit is a consequence of a significant decline in total revenues with a simultaneous increase in non-interest expenses and the cost of value adjustment of risky assets.

As stated in the Report of the Central Bank of Bosnia and Herzegovina on Financial Stability for 2020, most of the profits made by the banking sector are still concentrated in several larger banks, so that the net profit made by the two largest banks in BiH is higher than half of the profits of the entire banking sector, while the profits generated by the four most profitable banks account for 70.1% of the total net profits of the banking sector.

ROAA and ROAE profitability indicators as of 31.12.2020. were 0.76% and 6.01% respectively, which is a decrease in the value of these indicators by 6.1% and 4.4% compared to the same period in 2019. The decline in profitability indicators was caused by a decrease in profits reported by banks in 2020. year compared to a slight increase in average activity and capital.

2. Literature review

Numerous world authors have dealt with the topic of credit risk and its impact on the profitability of the banking system, analyzing various determinants of credit risk and their impact on bank profitability, most often shown by ROE and ROA indicators, over a specific period of time. Some of such research is presented below.

Al-Eitan and Bani-Khalid (2019) conducted a study of credit risk determinants on the profitability of commercial banks in Jordan. The analysis was conducted using panel data analysis, for the period 2008-2017. Data on the following variables were collected: the size of the bank, total deposits, the ratio of doubtful loans to total loans, the ratio of non-performing loans according to total loans (non-performing loans to total loans) and the ratio of credit losses to total loans. The analysis of the impact of these variables on the profitability of banks, measured by ROA and ROE indicators, concluded that the determinants of credit risk the size of the bank and total deposits have a positive impact on the profitability of banks, while the determinants ratio of doubtful debts to total loans, ratio of non-performing loans to total loans and ratio of credit losses to total loans total loans negatively affect the profitability of bank

Kolapo, Ayeni, and Oke (2012) conducted a study of credit risk determinants on bank profitability in Nigeria. The analysis was conducted using panel data analysis, for the period 2000-2010. Data on the following variables were collected: the ratio of total loans and advances to total deposits, the ratio of non-performing loans to total deposits, and the ratio of provisions for losses and total credit (loan loss provision to total loans). The analysis of the impact of these variables on the profitability of banks, measured by the ROA indicator, concluded that the ratio of loans and advances to total deposits has a positive impact on ROA, while the ratio of non-performing loans and total loans loans to total loans and advances) and the ratio of loan loss provision to total loans negatively affect the profitability of Nigerian banks.

Lee and Zou (2014) analyzed the impact of credit risk on the profitability of the 47 largest European commercial banks. The analysis was performed using linear regression analysis, for the period 2007-2012. Data on the following variables were collected: size of the bank, capital adequacy ratio, and the share of non-performing loan ratios. The analysis of the impact of these variables on bank profitability measured by ROA and ROE indicators concluded that the size of the bank has a positive impact on bank profitability, while capital adequacy ratio and the share of bad loans in non-performing loan ratios negatively affect ROA and ROE.

Gizaw, Kebede, and Selvaraj (2015) conducted an analysis of the impact of banks' exposure to credit risk in Ethiopia on their profitability as measured by ROA and ROE indicators. Regression analysis was used for the analysis, and data were collected for the period 2003-2014. for the following variables: loan loss provision ratio, capital adequacy ratio and the share of non-performing loan ratios in total loans. The results of the research showed a positive impact of the ratio of loan loss provision ratios on the profitability of banks, while the share of non-performing loan ratios and capital adequacy ratio have shown a negative impact on ROA and ROE.

Kithinji (2010) conducted an analysis of the impact of banks' exposure in Kenya to credit risk on their profitability as measured by the ROA indicator. Linear regression analysis was used for the analysis, and data were collected for the period 2004-2008. for the following variables: the share of non-performing loan ratios and the ratio of total loans to total bank assets (Amount of credit / total assets). The results of the research showed a positive impact of the ratio of total loans and total assets of banks on the profitability of banks, while the share of bad loans in total loans showed a negative impact on ROA.

Under such diversity in the relationship between the credit risk of banks and their profitability; this therefore leads to the key hypothesis:

H: The high share of non-performing loans in total placements has a negative impact on the profitability of commercial banks in Bosnia and Herzegovina.

3. Theoretical framework

Credit operations are the basic and most important segment of banks' operations, which explains the fact that credit risk is the most important risk to which the banking sector as a whole is exposed, while emphasizing the importance of continuous and adequate management of this type of risk. This claim is also proven by the World Bank research which showed that excessive exposure to credit risk led to over 90% of bank failures worldwide. For example, only in the United States in the period 1980-1993 a total of 1,500 banks failed due to excessive exposure to credit risk.

In order to improve financial stability and the quality of banking supervision worldwide, the Basel Committee, initially referred to as the Committee on Banking Regulations and Supervisory Practices, established a number of international standards for banking regulation, known as Basel I, Basel II, and the recently established Basel III standard which is particularly significant, as it arose in response to the great global financial crisis of 2008.

Aware of the challenges and risks posed by the globalization of the financial system, while learning from past examples in which many large and powerful banks have collapsed due to excessive appetites for profit, without analyzing and managing credit risk adequately, banks today invest enormous efforts and resources to adequately manage this type of risk, and to prevent and reduce the percentage of non-performing loans in their portfolios. In addition to the classic credit analysis, which is based on the subjective assessment of experts who are trained to assess the creditworthiness or creditworthiness of a client, today banks are increasingly striving to use more accurate internal models, which allow them a more detailed and reliable assessment of client risk, that can be underestimated or overestimated, which in both cases can cause problems for banks. Developed markets provide banks with the possibility of credit risk transfer, using credit derivatives that represent the latest group of credit risk management instruments.

Sometimes external and sudden circumstances such as sudden natural disasters, war events or other phenomena, such as the recent outbreak of the corona virus pandemic, which has caused and continues to cause enormous damage to the world economy and the entire financial sector),...etc. that are very difficult or completely impossible to predict when approving a particular placement, may lead to the fact that banks will not collect receivables for a particular placement in full or will not collect on time. Therefore, it can be concluded that banks' exposure to credit risk is inevitable, and that credit risk cannot be eliminated, but can be minimized.

4. Methodology

Empirical research was conducted using regression analysis, which according to Lulić (2014) is a statistical procedure that evaluates the relationship between variables. The aim of the research of this relationship is to determine the statistical dependence and to show the strength of that dependence. Regression analysis uses many techniques to model and analyze variables, where the focus is on the relationship between one dependent and one or more independent variables. Thus, it can be said that regression analysis helps to understand how the value of a dependent variable changes when some, any independent variable varies, while the other independent variables are fixed.

For the purposes of this study, a multiple linear regression model was used. It is a model that contains more than one regression variable and which looks like:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_k X_k + e$, where

Y - represents a dependent or regressive variable,

$X_1, X_2, X_3, \dots, X_k$ - represent independent, regressive or explanatory variables,
 $\beta_1, \beta_2, \beta_3, \dots, \beta_k$ - represent unknown parameters or regression coefficients, while
 e - represents a random variable or error

4.1. Definition of variables

Return on assets (ROA) is the ratio of net profit to total assets and according to Trujillo-Ponce (2013) serves as an excellent indicator of managerial efficiency and operational performance of banks, and is a key indicator for evaluating the profitability of banks.

Return on equity (ROE) is the second variable used to measure profitability and represents the rate of return generated by equity. Mathematically, it is calculated as the ratio of net profit and total bank capital.

Non-performing loans ratio (NPLR) is the basic and the most important indicator of credit risk. They are obtained by comparing the total non-performing loans with the total placed loans. A loan is considered uncollectible if the client is late with payment for more than 90 days. The lower the value of non-performing loans, ie NPL ratios, it means that the bank is healthier and safer for depositors / creditors.

Total loans and advances to deposit ratio (TLA / TD) is a very commonly used credit risk indicator in many research papers. This indicator is used to assess the bank's liquidity by ratioing the bank's total loans to total deposits for the same accrued period.

Total debt to total asset ratio (D / TA), this indicator, which is obtained by comparing the total liabilities on bank loans and its total assets, shows how much of the bank's assets are financed by debt. A higher value of this indicator indicates a higher exposure to credit risk.

Capital adequacy ratio (CAR) is the ratio between capital and risk weighted assets and refers to the amount of capital and other reserves that the bank holds as cover for risky assets. The main purpose of these reserves is to protect depositors from any unexpected losses. The minimum capital adequacy ratio according to regulations is 12%.

The dependent variable in this research paper is the profitability of banks, i.e. ROA and ROE ratios, while the ratio of total loans and advances to total deposits (TLA / TD), the ratio of non-performing loans and total loans ratio (NPLR), capital adequacy ratio (CAR), and the ratio of total debt to total asset (D / TA) are independent variables. Selected variables were modeled on previous empirical research.

Taking into account the above, the regression model looks like this:

$$ROA = \beta_0 + \beta_1 (TLA/TD) + \beta_2 (NPLR) + \beta_3 (CAR) + \beta_4 (D/TA) + e$$

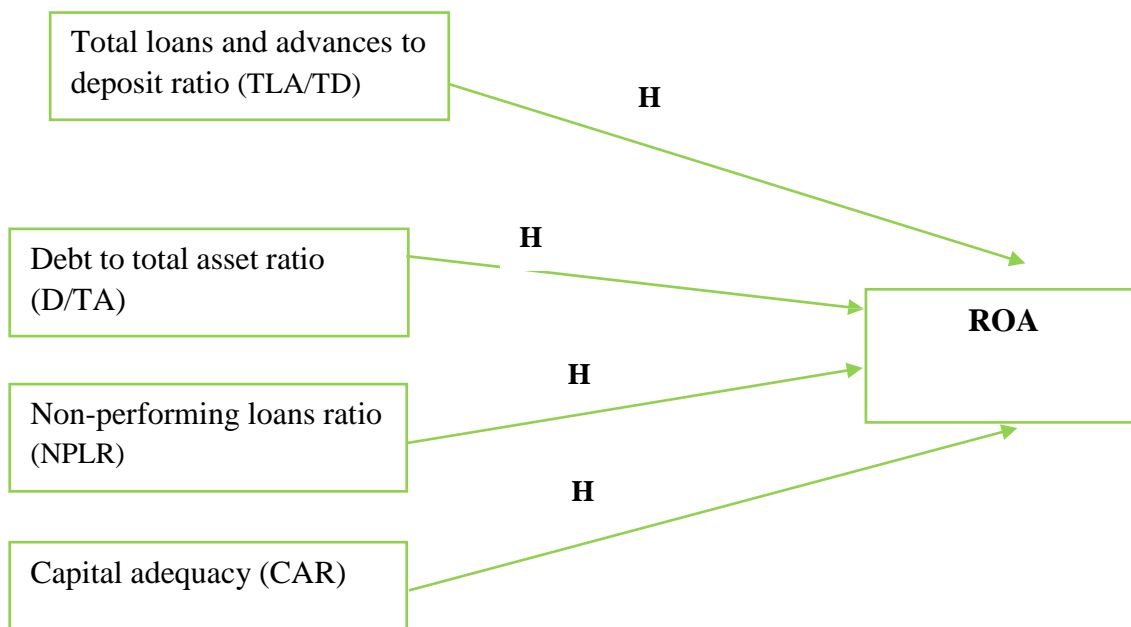
that is

$$ROE = \beta_0 + \beta_1 (TLA/TD) + \beta_2 (NPLR) + \beta_3 (CAR) + \beta_4 (D/TA) + e$$

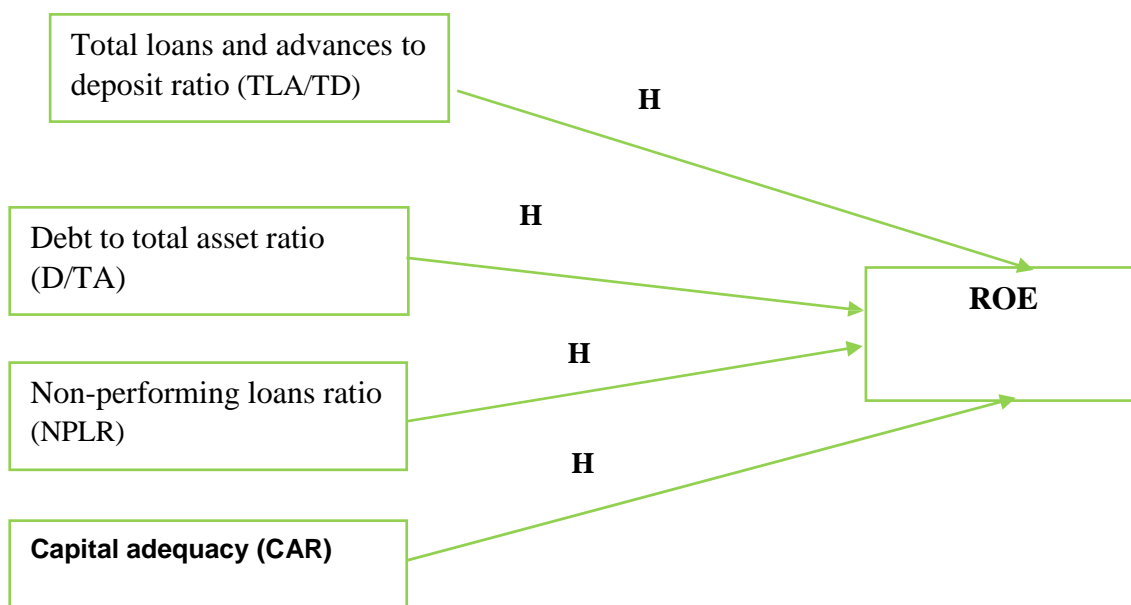
5. Results and discussion

With the aim of additional analysis of the relationship between the independent variables that include the ratio of total loans and deposits, the ratio of the bank's total credit obligations (total debt) and its assets, the ratio of non-performing loans and total loans and the capital adequacy ratio, and the dependent variables of return on assets ROA and return on equity ROE, correlation analysis was applied, then followed by pooled OLS multiple regression.

Since there are two dependent variables in this research, two separate regression models were analyzed. In model 1, the influence of independent variables (TLA/TD, D/TA, CAR, NPLR) on return on assets (ROA) was analyzed.



In model 2, the influence of independent variables (TLA/TD, D/TA, CAR, NPLR) was also analyzed, but this time on return on capital ROE.



5.1. Correlation analysis for Model 1

In order to analyze the initial relationship between the dependent variables, return on assets in model 1 and return on capital in model 2, and independent and control variables, a correlation analysis was conducted. Considering the normal distribution of the data, the Pearson correlation coefficient test was used for this analysis. In model 1, the results of the Pearson test are shown in Table 1. It is evident from the table that the independent variable the share of non-performing loans in total loans (NPLR) has the strongest relationship with the dependent variable. This indicates that the set hypothesis is fulfilled, however further analysis is needed.

The results of the test also showed that the other independent variables ratio of total loans to deposits (LTDR), capital adequacy (CAR), or ratio of debt to total assets (DTA) are not statistically significant for Model 1, since $p > 0.05$. However, for greater certainty in this result, all variables were included in the regression model. In order to further test the hypothesis, a regression analysis was performed below.

Table 1. Results of Pearson correlation test for Model 1

Variable	Pearson correlation test	Significance of the test
Loan to deposit ratio (LTDR)	0.0182	0.8283
Non-performing loans ratio (NPLR)	-0.6187	0.0000
Capital adequacy ratio (CAR)	0.0003	0.9974
Debt to total asset ratio (DTA)	-0.0165	0.8442

Source: Authors' computation

5.2. Regression analysis for Model 1

Hierarchical multiple regression was performed in two steps:

1. In the first step, the individual influence of the independent variable the share of non-performing loans in total loans (NPLR) on the dependent variables return on assets (ROA) and return on capital (ROE) was observed.
2. In the second step, the influence on the dependent variables return on assets (ROA) and return on capital (ROE) was observed when all independent variables were simultaneously included in the model.

The results of the regression analysis for Model 1 are presented below in Table 2.

Given that there are four independent variables in the conducted analysis, it would be preferable for the sample to have 40 observations (4x10) or even 60 observations (4x15).

In this case, the number of observations is 144, which is more than enough even for the detection of small effects.

The performed regression analysis (Table 2) showed that the regression coefficient of determination of the set Model 1.1. is $R^2 = 0.3828$, which means that the variable non-performing loan ratio (NPLR) explains 38.28% of the variability of the dependent variable return on assets (ROA), that is, based on the set Model 1.2., it is evident that this

the model explains a slightly higher percentage of the reliability of the dependent variable ROA, namely 39.83%, and therefore it can be concluded that the influence of the other independent variables is mostly imperceptible. The regression results also showed that Models 1.1. and Model 1.2. statistically significant, since in both models the value is ($p < 0.05$), which indicates that the mentioned influence is real and not accidental.

Table 2. Results of regression analysis for Model 1.1. and Model 1.2.

Model 1.1. (Dependent variable: ROA)						
Number of observations	F		Prob > F		R-squared	
144	15.66		0.0001		0.3828	
Independent variables	Coef.	Robust standard error	t	P> t	[95% Confidence interval]	
NPLR	-0.1268089	0.0320447	-3.96	0.000	-0.1901551	-0.0634626
_cons	2.024568	0.3171391	6.38	0.000	1.397645	2.651492

Model 1.2. (Dependent variable: ROA)						
Number of observations	F		Prob > F		R-squared	
144	5.15		0.0007		0.3983	
Independent variables	Coef.	Robust standard error	t	P> t	[95 Confidence interval]	
LTDR	0.0093969	0.0054799	1.71	0.089	-0.001438	0.0202317
NPLR	-0.1305439	0.0325806	-4.01	0.000	-0.1949616	-0.0661262
CAR	-0.0059246	0.0071032	-0.83	0.406	-0.0199688	0.0081197
DTA	-0.0440168	0.0429277	-1.03	0.307	-0.1288925	0.0408588
_cons	1.567408	0.3212759	4.88	0.000	0.9321884	2.202627

Source: Authors' computation

The independent variable non-performing loan ratio (NPLR) is in both models a significant predictor of the dependent variable ROA at the level of statistical significance of 1% ($p < 0.01$), the coefficient β_2 shows that the impact is negative, which means that by increasing the share of non-performing loans in the bank's total placements (NPLR) by 1%, the profitability of banks expressed by the ROA indicator will decrease by 0.1268089, ceteris paribus (Model 1.1), i.e. by 0.1305439 (Model 1.2), which confirms that the high share of non-performing loans in total placements negatively affects the profitability of commercial banks in Bosnia and Herzegovina expressed by the ROA indicator.

As when examining the impact of NPLR on bank profitability expressed by the ROA indicator, to prove the negative impact of non-performing loans on bank profitability expressed by return on capital (ROE).

5.3. Correlation analysis for Model 2

Pearson's correlation coefficient (Table 3) showed a high level of correlation between the independent variable the share of non-performing loans in total loans (NPLR) and the dependent variable return on equity (ROE). The test results also showed that the other independent variables total loans and deposits ratio (LTDR), capital adequacy (CAR), and debt to total assets ratio (DTA) are not statistically significant for Model 2, since $p > 0.05$. However, for greater certainty in this result, all variables are included in the regression model.

Table 3. Results of Pearson correlation test for Model 2

Variable	Pearson correlation test	Significance of the test
Loan to deposit ratio (LTDR)	-0.0425	0.6128
Non-performing loans ratio (NPLR)	-0.5958	0.0000
Capital adequacy ratio (CAR)	-0.0522	0.5345
Debt to total asset ratio (DTA)	0.0075	0.9285

Source: Authors' computation

5.4. Regression analysis for Model 2

The regression analysis was carried out in two steps, as in Model 1, in such a way that in the first step in Model 2.1. observed the impact of only the independent variable of the share of non-performing loans in total loans (NPLR) on the profitability of banks expressed by the ROE indicator, while in Model 2.2. is observed the influence of other independent variables.

Table 4. Results of regression analysis for Model 2.1. and Model 2.2.

Model 2.1. (Dependent variable: ROE)						
Number of observations	F		Prob > F		R-squared	
144	20.94		0.0000		0.3550	
Independent variables	Coef.	Robust standard error	t	P> t	[95% Confidence interval]	
NPLR	-0.7668987	0.1676099	-4.58	0.000	-1.098232	-0.4355657
_cons	13.24395	1.608504	8.23	0.000	10.06424	16.42366
Model 2.2. (Dependent variable: ROE)						
Number of observations	F		Prob > F		R-squared	
144	7.76		0.0000		0.3595	
Independent variables	Coef.	Robust standard error	t	P> t	[95% Confidence interval]	
LTDR	0.0297488	0.0287128	1.04	0.302	-0.0270215	0.0865191

NPLR	-0.7764106	0.1734514	-4.48	0.000	-1.119355	-0.4334663
CAR	-0.0484563	0.0439273	-1.10	0.272	-0.1353084	0.0383958
DTA	-0.1771022	0.260869	-0.68	0.498	-0.6928865	0.3386821
_cons	12.56758	2.061331	6.10	0.000	8.491964	16.6432

Source: Authors' computation

The performed regression analysis (Table 4) showed that the regression coefficient of determination of the set Model 2.1 is R-squared=0.3550, which means that the variable share of non-performing loans in total loans (NPLR) explains 35.50% of the variability of the dependent variable return on capital (ROE), that is, based on the set Model 2.2. it is evident that this model explains a slightly higher percentage of the reliability of the dependent variable ROE, namely 35.95%, and therefore it can be concluded that the influence of the other independent variables is mostly imperceptible. The regression results also showed that Model 2.1. and Model 2.2. statistically significant, since in both models the value is (p<0.05), which indicates that the mentioned influence is real and not accidental.

The independent variable the share of non-performing loans in total loans (NPLR) is in both models a significant predictor of the dependent variable ROE at the level of statistical significance of 1% (p<0.01), the coefficient β_2 shows that the impact is negative, which means that by increasing the share of non-performing loans in the bank's total placements (NPLR) by 1%, the profitability of banks expressed by the ROE indicator decreases by 0.7668987, ceteris paribus (Model 2.1), i.e. by 0.7764106 (Model 2.2), which confirms that a high share of non-performing loans in total placements has a negative effect on the profitability of commercial banks in Bosnia and Herzegovina expressed by the ROE indicator.

After a complete analysis of Model 1 and Model 2, the conclusion is reached that the established hypothesis is fully accepted, that is, that a high share of non-performing loans in total placements negatively affects the profitability of commercial banks in Bosnia and Herzegovina.

6. Conclusion

The main goal of this paper was to prove the negative impact of exposure of commercial banks in Bosnia and Herzegovina to credit risk on their profitability. For this purpose, profitability indicators ROA and ROE were used, as well as determinants of credit risk such as the ratio of total loans to deposits, the share of non-performing loans in total loans, the capital adequacy rate and the ratio of total debt to total assets of the bank. Data on the mentioned indicators for the period from 2015 to 2020 were collected for all 24 banks currently operating in Bosnia and Herzegovina. The collected data were analyzed using the method of multiple linear regression in the statistical program Stata 12, and the results of the analysis showed that only the share of non-performing loans in the total placements of banks has a significant impact on the profitability of banks expressed by indicators ROA and ROE. This influence is negative, and in this way the basic goal of this paper is accomplished and basic hypothesis is proven. The results of the research also showed that the other variables used in the models are not significant, and that their influence on the profitability of banks expressed by ROA and ROE indicators is mostly imperceptible.

According to the latest CBBH Report on Financial Stability for 2020, non-performing loans, which also make up the largest percentage of non-performing assets, were reduced by a total of 262.7 million KM compared to the same period in 2019, which in percentage terms represents a decrease of 17.1%. This decline in non-performing loans was primarily contributed by the

application of new regulatory regulations regarding the accounting write-off of non-performing loans, and favorable financing conditions such as low interest rates. Although this write-off affected the reduction of the total level of loans, on the other hand, it led to the share of non-performing loans in total loans in 2020 amounting to 6.12%, which is a decrease compared to the same period in 2019. of 1.29 percentage points. Also, the average coverage of non-performing loans by provisions is 1.4 percentage points higher than in 2019 and at the level of the banking sector in 2020 was 78.4%. It is certainly important to point out that the low level of non-performing loans was maintained thanks to the measures adopted by the banking agencies, primarily referring to the moratoriums that the banks introduced for those clients who were affected by the negative effects of the Covid-19 pandemic and who had problems as a result with the repayment of their debts.

This work seeks to build on previous research conducted on the same or similar topics. It also tries to provide bankers, investors, financial analysts and supervisors with a better understanding of the relationship between profitability and credit risk, and at the same time point out the negative impact that non-performing (non-performing) loans have on the profitability of banks.

As previously stated, this research was done on the model of previous researches that were done on the same topic on the examples of certain European and African countries. The results of the regression analysis carried out on the example of commercial banks operating in Bosnia and Herzegovina showed a relatively low value of the R-squared indicator, and based on this it can be concluded that this model can be further improved by including in the research additional indicators of credit risk in addition to those used in this work, which can certainly be a recommendation for future research on this topic.

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THE MINIMUM WAGE AND ITS IMPACT ON EMPLOYMENT IN KOSOVO

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Abstract

This paper aims to examine the employment effect of the minimum wage in Kosovo, a country that has recently introduced an economy-wide national minimum wage. Given that women have lower labor force participation rates and higher unemployment rates than men, this study sheds light on the impact of the national minimum wage on the employment of men and women. The methodology refers to a conceptual framework based on the work-leisure model of Blundell et al. (2007) the inclusion of the minimum wage as an important variable that affects the individual's employment decision serves as the methodological background of this paper. It applies the difference-in-difference estimation technique and uses micro data from the continuous multi-purpose survey of households over a period. The results show that the minimum wage has a significant negative impact on overall employment. With the establishment of the national minimum wage, the probability that an individual currently earning less than the minimum wage will remain lower than that of an employee earning above the minimum wage level. Furthermore, using data disaggregated by sex, the analysis shows that the negative effects of minimum wage employment negatively affect women more than men. This is a first attempt to assess the effect of the newly introduced national minimum wage on employment in Kosovo. While the effects of the minimum wage vary across different segments of the economy, this study adopts a gender perspective by comparing the impact of the minimum wage on male and female employment.

Keywords: minimum wage, employment, gender

JEL Classification: A10, E00, E24, J00

GEOSPATIAL ANALYSIS OF WEATHER-RELATED RISKS IN AGRICULTURE USING DATA MINING TECHNIQUES

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Abstract:

Natural hydrological, lithospheric and atmospheric processes have always caused certain losses. However, their effects are expected to be greater and more frequent in the future as climate change intensifies. The impact of weather-related risks on agriculture is particularly significant, because losses caused by these risks directly affect consumption, savings and investment in both developed and developing countries, but low-income countries are particularly vulnerable to these changes. Therefore, abundance of data has been generated in recent years to support climate prediction and modeling its impact on agriculture. This data is spatio-temporal and multidimensional and requires sophisticated techniques for extracting patterns in these big data sets. Data mining has a very important role in analysis of agricultural big data since it involves methods at the intersection of artificial intelligence, machine learning, statistics, and database system. The aim of this paper is to perform a spatial and temporal analysis of the weather-related risks' impact on the agriculture in the Republic of Serbia. For this purpose, data from several databases were used, as followed: the data on weather-related risks were collected from the database of the Republic Hydrometeorological Service of Serbia; the data on yield were collected from the database of the Statistical Office of the Republic of Serbia, and the data on the agricultural damage from the "DesInventar" database, all for the period from 1996 to 2022. Multidimensional data analysis shows that the effects of weather-related risks are greater in less developed regions. Moreover, low-intensity risks, which effects are generally not regarded as relevant from a macroeconomic point of view, further affect sustainable local development. The greatest damage, though, was done to agricultural farms that suffered losses of even 1,112,891 ha in the observed period, and taking into account the spatial distribution of these damages, it can be concluded that the least developed regions in the Republic of Serbia are most endangered. From this point of view, the results of this paper point to significant aspects of the effects of weather-related risks, as well as potential ways to manage agricultural production in the Republic of Serbia. Therefore, they can be considered a notable input for policy makers, insurance companies and other relevant stakeholders in risk management.

POSITIONING TRAFFIC SECURITY THROUGH THE ISSUE OF THE RAILWAY POLICE

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Abstract:

The importance of traffic safety can always be discussed as a current topic and problem. The development of traffic, means of transport and transport infrastructure has opened the door to security issues and the need to innovate the security policy that should be implemented in the future. A very important issue is the need to position the railway police as an institution that will have the task of raising the safety level in railway traffic. An overview of the organization of the railway police at the level of European countries is given, along with an analysis of the work of those services. In the Republic of Serbia, railway traffic safety is dealt with by the regular police, while in many countries of the world a special railway police was established for this purpose with responsibilities that relate exclusively to railway traffic.

Keywords: *security, traffic, railway, infrastructure, police.*

JEL classification: K22, K32, K42, R41, L92.

TAXATION OF DIGITAL SERVICES IN THE VALUE ADDED TAX (“VAT”) SYSTEM IN BOSNIA AND HERZEGOVINA COMPARED TO OECD GUIDELINES

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Abstract

Increasing importance and value of services provided by digital platforms illustrate the value that digitization is creating in the economy. The growth of revenues from digital platforms is related to the use of intellectual property rights and / or the growing demand for advertising through the platforms. While this has a positive impact on digital platforms, revenues generated through these types of services and products are primarily reported in countries with lower tax rates instead the country of origin of the company providing the services which prompted a discussion on how to develop an effective model of taxation of the digital products and services. Since than various policy proposals have been developed, from the OECD's proposal to Base Erosion and Profit Shifting, the OECD report on the digital economy, to more specific proposals for a digital services tax in the European Union. In the last published report of the OECD in 2021, where an overview of the implementation of the introduction of Digital Service Tax by countries in Europe was presented, Bosnia and Herzegovina (hereinafter: “BiH”) belongs to the group of countries in which initiatives in the development of taxation of digital products and services were not encouraged. Considering that Value Added Tax (hereinafter: “VAT”) represents one of the most important taxes within the public revenues of BiH and that the digital economy occupies an increasing part of the real sector need for harmonization of taxation from the aspect of digital products and services is extremely important. All previous stated leads us to main purpose of this paper and that is: “Conduct analysis of presence of companies which operates with digital products and services in BiH and their VAT treatment in BiH compared with OECD guidelines.” Methodology: Conducted research will be bases on secondary data based on adequate literature review and a theoretical framework, which primarily referees to scientific articles, publications by the OECD and applicable VAT legislative together with available databases. The collection 2 of secondary data will be conducted on a sample of the one hundred most successful companies in the digital market in the world according to the Forbes list. Results and implication: We hope that conducted research will result with detailed outline model of taxation of digital goods and services in BiH highlighting the potential opportunities raising from improving compliance of legislative in BiH related to VAT taxation of digital products and services with OECD guidelines

FEMALE BOSNIAN TRANSNATIONAL DIASPORA ENTREPRENEURS – UNDERSTANDING THEIR ROLE IN FOSTERING ENTREPRENEURSHIP IN BOSNIA AND HERZEGOVINA

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Abstract

The global diaspora may play an important role in business development in their home and host countries. Through networks and resources, diaspora members can add great economic value across borders. Focusing on female transnational diaspora entrepreneurs, it can be said that their impact to the development of networks and collaborations can contribute to the needed empowerment of female entrepreneurial ecosystems in their home societies. However, little is known about female entrepreneurs in the context of transnational entrepreneurship between Bosnia and Herzegovina on one, and host country on other side. We propose to address this issue by seeking answers to the following questions: What are the key motivations for Bosnia and Herzegovina diaspora female entrepreneur when beginning/considering her transnational diaspora business activities? What are the key entrepreneurial behaviors by Bosnia and Herzegovina diaspora female entrepreneur when starting her transnational diaspora business activities? What are the key strategies that this woman use when starting their transnational diaspora business activities? What is the role of networking when starting her transnational diaspora business activities? How do female diaspora entrepreneur perceive success? How she perceive the role of both contexts and entrepreneurial ecosystems in transnational entrepreneurship? Suggesting a contingency view on transnational diaspora entrepreneurship (Kast and Rosenzweig 1979, Lawrence and Lorsch 1986) and through single instrumental case study (Mills, Durepos, and Wiebe, eds. 2010) we explore female transnational diaspora entrepreneur role in fostering entrepreneurship in Bosnia and Herzegovina. In this study the multiple sources (Schramm, 1971) of evidence were: (a) interview transcript; (b) research field notes and (c) researcher memos. This study provides considerable exploration (Gioia, Corley, and Hamilton, 2012) of key motivations, behaviors, strategies, networking and perceptions of Female Bosnia and Herzegovina Transnational Diaspora Entrepreneurs that will add to the literature.

Keywords: transnational entrepreneurship, diaspora, diaspora entrepreneur, female entrepreneur

JEL classification: L26, F29, A13

THE EFFICIENT MARKET HYPOTHESIS – EVIDENCE FROM BOSNIA AND HERZEGOVINA

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Abstract:

An important feature of any financial market is the degree of efficiency. Financial markets in developing countries are usually associated with a weak form of efficiency markets. Previous research about the degree of efficiency of the financial markets has been conducted in developing and transition economies, and the results mostly confirm that these markets still work in a weak form of market efficiency.

Bosnia and Herzegovina is a developing country and a country in transition with a poorly developed financial market. In this context, this paper examines the efficient market hypothesis in Bosnia and Herzegovina financial markets and starts from the hypothesis that the financial market in Bosnia and Herzegovina follows weak forms of efficiency. Testing was carried out using data from stock market indices from the Sarajevo and Banja Luka Stock Exchanges, namely the BIFXX, SASX10 and BIRS indices. The analysis includes weekly and monthly data from February 2006 to August 2022.

Testing of the weak form of market efficiency in Bosnia and Herzegovina was performed through four statistical tests: autocorrelation test, ADF test, "runs" test and variance ratio test. The results obtained by the application of various tests do not give a unique answer to the question of whether the financial market in BiH functions at weak form efficiency. Autocorrelation tests reject the hypothesis of weak financial market efficiency, while other tests mostly confirm a weak form of market efficiency.

Keywords: financial markets, efficiency, weak form, index, Bosnia and Herzegovina.

1. Introduction

One of the most common issues for investors nowadays is to what extent financial markets are efficient as all of them aim to increase their gains and beat the market as much as possible. The term 'efficiency' is used in many different contexts with different meanings. If we look at the productivity side, efficiency refers to a situation where the quantity produced is at a level that the more you create from this point onwards it will lead to fewer productions of the other. In a similar context, one can also think of Pareto-efficiency: the distribution of resources to make one better off but at the expense of another (Aktan, Sahin, & Kucukkapan, 2018).

In analyzing financial markets, whether these markets are from a developed or emerging economy, the term 'efficiency' refers to the informational efficiency of the market, which is about the degree of information reflected in the prices of financial assets (Dimson & Mussavian, 1998).

"Efficiency" reflects how the financial asset prices adapt to the incoming information. The quicker it reflects the more informational efficient the market will be, making it hard for investors to beat the market (KP & Brooks, 2009).

This paper aims to examine the efficient market hypothesis (EMH), which is the main theory behind information efficiency. Relevant definitions are provided and the different forms of efficiencies are identified using previous studies. Possible anomalies are also discussed. The paper concludes with a discussion on the usage of the efficient market hypothesis as the basis of investment policies and an application part, where the stock market prices of the emerging economy are analyzed using an augmented Dickey-Fuller (ADF) test to observe whether they contain a unit root or not. All of these parts will be explained in relation to the information efficiency of an emerging economy.

The efficient market hypothesis (EMH) has made a tremendous contribution to the area of finance in the past few decades. Among the three forms of market efficiency, probably the weak form is the most commonly tested form. There is a lot of research on emerging economies (including developed and transition economies) that mainly focuses on the weak form and in some cases the semi-strong form (Phiri, 2015). The strong form of market efficiency is difficult to test (Finnerty, 1973), and there is hardly any evidence of its test on emerging economies. In emerging economies, returns on stocks are said to be highly predictable and stock markets are less efficient than those of emerging economies (Ozdemir, 2008).

2. Literature review

The theory of efficient markets originated with the PhD work of Fama in 1960, which asserts that in any given period, prices of stock in total reflect all presented information. The fact that all sellers and buyers have access to the same presented information which endlessly comes surprisingly into the market, prices of stock fluctuations become random, which will respond to strange information for the stock market. In his work, Eugene Fama opined that efficiency exists in three forms; weak, semi-strong and strong. In the weak form, prices of stock immediately reveal all presented information of precedent prices. It assumes that by relying on previous prices, trends in security prices in the stock market cannot be predicted (Abdullahi, 2021). The efficient market hypothesis states that prices of financial assets reflect all information that is available (Busse & Clifton, 2002). According to Fama, an efficient security market is one in which prices always fully reflect all the available information (Fama, 1970).

A review of the general literature reveals a wealth of empirical research conducted in several countries and at different time periods. There have been many attempts to examine the efficiency of the European emerging capital markets with the earliest starting in 1988 (Novak, 2019). The efficient market hypothesis states that prices on markets act as a signaling mechanism, directing resource allocation. Its assumptions include no transaction costs, perfectly and freely available information, and perfect competition. The empirical literature provides mixed findings regarding the validity of the efficient market hypothesis (Katusiime, Shamsuddin, & Frank, 2015).

For example, Lee et al. investigated the efficiencies of 26 developing countries using panel data stationarity tests between 1999 and 2007, which showed the inefficiency of these markets (Lee, Lee, & Lee, 2010). Kim and Shamsuddin looked at the weak form of efficiency of a group of Asian stock markets using both daily and weekly data from 1990 to 2005. They have found that stock markets in Hong Kong, Japan, Korea, Singapore, and Taiwan were efficient in the weak form. But stock markets in Indonesia, Malaysia, and the Philippines were found to be inefficient (Al-Ajmi & Kim, 2012).

It is interesting as the Korean stock market has been tested for a weak form of efficiency by others and found inefficient (Mun & Kee, 1994) (Ayadi & Pyun, 1994) (Huang, 1995) For illustration, Istanbul Stock Exchange was tested for a weak form of efficiency by many and was also found to be both efficient

(Ozdemir, 2008), (Buguk & Brorsen, 2003) (Karan & Kapusuzoglu, 2010) and inefficient (Balaban & Kunter, 1997).

It is important to point out that the data presented in this paper on the efficiency of emerging economies comprises only an extremely small sample of the entire population of studies. Therefore, we can suggest there are many studies, with many different results. The results can show variations among each other, where one study can indicate efficiency, whereas the other shows inefficiency. The reason can be attributed to data being collected from different time periods, whether daily, weekly or monthly data that is being used, or even can be due to the tests that are used. Only recently, studies have pointed out that nonlinearity in stock prices is very important and should be taken into account in the tests to prevent misleading results (Gozbasi, Kucukkaplan, & Nazlioglu, 2014).

Among publicly published research, it is most often confirmed that transition countries have or have had poorly efficient financial markets, especially in the initial stages of their development (Bahmani-Oskooee, Chang, Tsangyao, Chen, & Tzeng, 2016) (Kvedaras & Basdevant, 2002). Nisar and Hanif (2012) tested the hypothesis of the weak form of market efficiency on the example of four major stock exchanges in South Asia, including stock exchanges in India, Pakistan, Bangladesh, and Sri Lanka (Nisar & Hanif, 2012). In the analysis, indices from the analyzed stock markets were used for the fourteen years, from 1997 to 2011, and the daily, weekly and monthly returns of the indices were analyzed. The hypothesis of a weak form of market efficiency was tested using four statistical tests: runs test, autocorrelation, unit roots, and variance ratio. The research results indicate that none of the analyzed markets follows a weak form of market efficiency. Harrison and Paton (2005) claim in their research that the development and efficiency of the financial market should be the focus of the economic policy of the country that wants to join the EU because the concrete economy demonstrates the existence and functioning of the market economy (Harrison & Paton, 2004). These authors tested the hypothesis about the efficiency of the financial market on the example of the stock exchange in Bucharest in the period from mid-1997 to September 2002. The focus was on the daily prices of the securities traded on this stock exchange, using the GARCH model. The authors found strong evidence of financial market inefficiency.

Hasanov and Omay (2007) conducted research among transition countries to identify and examine the degree of market efficiency. The research sample included the financial markets of Bulgaria, China, the Czech Republic, Poland, Romania, Russia and Slovakia (Hasanov & Omay, 2007). The efficiency of the financial market was tested with the unit root test. The results of the non-linear unit root test showed that Bulgaria, the Czech Republic, Hungary and Slovakia have a unit root test, which means that they are consistent with a weak form of market efficiency. Šoja, Galijašević and Čeman (2019) using three statistical tests: autocorrelation or DW test, runs test and variance ratio test, showed that it cannot be fully claimed that the financial market in BiH is poorly efficient (Šoja, Galijašević, & Čeman, 2019). These results lead to the conclusion that the financial market in BiH is not completely inefficient, but that in some cases it shows signs of mild efficiency. Through the analysis of previous empirical research on the efficiency of the Croatian capital market, it is not possible to reach an unambiguous conclusion on whether the Croatian capital market is efficient or not in terms of confirming the EMH hypothesis. In a study of 15 European emerging stock markets for the period 2000 – 2009, Smith identified different levels of efficiency of the analyzed countries by using fixed-length rolling sub-period windows (Smith, 2012).

Another paper examined the efficiency of 20 post-communist stock markets in the period 2008-2010. In order to increase the robustness of the results, authors used various approaches: the January effect, Unit root test, Variance ratio test, Runs test and Filter rules test. In the case of Bulgaria, Czech Republic, Croatia, Georgia, Hungary, Estonia, Kazakhstan, Latvia, Lithuania, Poland, Romania, Slovenia, and Slovakia stock markets were found to be at least weak form efficient while in the case of Bosnia and Herzegovina, Serbia, Montenegro, Northern Macedonia, Moldova, Ukraine and Russia efficient market hypotheses was rejected. Due to heterogeneous

results, the twofold recommendation was given to decision-makers. If the efficient market hypothesis holds, investors should use more passive trading strategies and if the efficient market hypothesis does not hold, then investors should use more active trading strategies (Dragotă & Valentina Țilică, 2014). Contrary to this result for the Czech Republic, another author applied the state space approach and managed to formulate a strategy to beat the Czech Republic stock market and therefore violate the assumption of the efficient market hypothesis (Svoboda, 2016). Another paper studied exclusively Serbian stock market efficiency. In order to confirm the lack of market efficiency authors used Dickey Fuller, Phillips Peron (PP) and Run Test. They believe the lack of market efficiency resulted from the non-symmetric information, high transaction costs, few highly liquid stocks and the lack of strong institutional investors (Stakić, Jovancai, & Kapor, 2016). As for the results for Croatia, they showed a lack of weak-form efficiency due to the possibility of return predictability and achieving above-average results. Although this was not their primary area of research, Čondić Jurkić and Dadić came to the same result (Čondić Jurkić & Dadić, 2008). Namely, among other things, they tested the CROBEX index on a weak form of efficiency using the autocorrelation test for the analysis period from 1999 to 2007. Their results point to the absence of a “random walk” in returns, but also state that the result could be a consequence of illiquidity and market fragmentation, discontinuity of trading, delayed reporting and high transaction costs. Barbić came to the same result and conclusions using the same methodology, analyzing the Croatian stock market for the period from 1997 to 2007 (Barbić, 2010). To determine the impact of the global financial crisis on capital market efficiency, 11 markets were analyzed in South East European countries for the period 2005 – 2015 (Tsenkov & Stoitsova-Stoykova, 2017). The analysis period was divided into subperiods that covered the period before, during and after the crisis. Using multiple methodologies, namely autocorrelation analysis, the Run test and the GARCH family models, heterogeneous results were obtained. However, results related to Croatia indicated that a weak form of the efficient hypothesis was rejected for the entire period. In addition, research conducted on the Croatian stock market for the period from 2000 to 2019 using the quantile unit root approach showed that there is no evidence for a weak form of the efficient market hypothesis (Novak, 2019).

Tokić, Bolfek and Radman Pešain analyzed financial markets in four developing countries (Croatia, Serbia, Slovenia, Slovakia) using daily returns of their respective stock market indices from January 1, 2006, until December 31, 2016, a time frame that was rarely analyzed. Analysis was conducted by various statistical tests, more precisely serial correlation test, runs test, Augmented Dickey-Fuller test, unit root test, variance ratio test and test of January effect. Results suggest that all analyzed indices, except BelexLine (Serbia), confirm the weak form of an efficient market hypothesis, while the results on the index BelexLine are mixed and it can be concluded that it does not follow the weak form of an efficient market hypothesis. Given these results, it can be said that not only passive approach to portfolio management is more appropriate on all indices, except BelexLine, but also additional tests and more complex models are necessary to confirm this conclusion (Tokić, Bolfek, & Radman Peša, 2018).

3. Methodology and data

To test the weak form of efficiency of the financial market of BiH we used secondary data of stock market indices from the stock exchanges in BiH, namely: SASX10, BIRS and BATX indices. The analysis includes data on weekly and monthly movements from February 2006 to August 2022.

SASX-10 is the benchmark index of the Sarajevo Stock Exchange that tracks the price movements of the first 10 companies on the market (excluding investment funds) measured by market capitalization and trading frequency.

BIRS is the stock market index of the Republic of Srpska. It is a price index (does not include dividends), and it is a weight index (market capitalization) with a maximum participation of one issuer 25%.

The BIFXX index is an investment funds index. It is published by the Sarajevo Stock Exchange. It consists of the shares of the 11 investment funds registered in the Federation of Bosnia-Herzegovina.

In our calculation, we used the weekly and monthly data for those indexes. In the first step, we calculated returns, weekly and monthly, and in the next step, we used that data for testing the weak form efficiency. In order to test weak form efficiency we used a few tests: autocorrelation test, ADF test, „runs“ test and variance ratio test.

In the first step we calculated indexes returns:

$$R_t = \ln\left(\frac{p_t}{p_{t-1}}\right)$$

R_t is return; \ln is the natural logarithm, p_t is the value in the current period and p_{t-1} is the value of the previous period.

As previously stated, the weak form market efficiency is tested via a few tests: autocorrelation test, ADF test, „runs“ test and variance ratio test.

Autocorrelation is a series correlation that measures the relationship between the data of the same series in the current or the observed period, in relation to the value from the past. If there is a correlation between the current and previous returns, and if it is significant and positive, then it can be concluded that there is a safe trend in the return series. In that case, there is no random walk in the movement of data. If the correlation between the current and previous returns is significantly negative, then it can be concluded that there is a significant inverse relationship within the existing series of returns, but this still means that there is no random walk in the movement of the analyzed data. If the correlation between the current return and the previous return is zero, then it is concluded that there is a random walk among the analyzed data.

In this analysis, the existence of autocorrelation between the returns of the analyzed indices on a daily, weekly and monthly level was examined, using the Durbin-Watson test. It was examined whether there is a correlation between returns in time t and returns in periods $t-1$, $t-2$, ... $t-n$. If the market is efficient, then the relationship between returns should be insignificant. The basic formula of the Durbin-Watson test is as follows (Durbin and Watson, 1950):

$$d = \frac{\sum_{t=2}^T (e_t - e_{t-1})^2}{\sum_{t=1}^T e_t^2}$$

Where T denotes the number of observations, e_t is the current return (dependent variable), e_{t-1} is the data from the previous period (independent variable). The Durbin-Watson has a value of approximately $2(1-\rho)$, where ρ represents the estimated parameter whose value lies within the interval $-1 < \rho < 1$

Value d which is a measure of the DW test always lies between 0 and 4. If indicator d is significantly below 2, it is a sign that the series has a positive serial correlation. As a rough rule, if the indicator d is less than 1, then there is a strong positive correlation, and if d is greater than 3, then there is a strong negative serial correlation.

ADF test

The next test that is used for testing the weak form market is the runs test. We used the following expression to perform the runs test is as follows:

$$Z = \frac{R - X}{\sigma}$$

R is the total number in the sequence
 $X = 2n_1n_2 + 1/n_1 + n_2$
 n_1 = number of positive numbers in the sequence
 n_2 = number of negative numbers in the sequence

$$the\ the\ the\ \sigma = \sqrt{2n_1n_2(2n_1n_2 - n)/n^2(n - 1)}$$

$N = n_1 + n_2$

z = normal variation

If the z -value is greater than -1.96 and less than +1.96, then the obtained data is significant, which means that the prices of securities move randomly, there is a random walk. If the z -value is less than -1.96 and greater than +1.96, then the obtained data is not significant, which means that the prices of securities do not move towards a random walk.

In the analysis, we used the ADF test. This test is part of the methodology implemented by Dickey and Fuller (1979) as a way of testing stationarity in time series. If the time series has a unit root, then that series is non-stationary, which suggests it doesn't follow a random walk completely. ADF can be represented with the following equation (Dickey & Fuller, 1979):

$$\Delta P_t = \mu + \alpha_1 t + \gamma P_{t-1} + \sum_{i=1}^q p_i \Delta P_{t-1} + \varepsilon_t$$

where Δ represents the first difference, P_t represents the log of the index value, μ is a constant, while γ and p are coefficients, which are guessed, q marks the number of lags, t represents the trend, while α_1 represents the trend coefficient and the error term is represented by $t \varepsilon$ (Chung, 2006,).

The fourth test that was used when evaluating the hypothesis of a weak form of market efficiency is the variance ratio test. Lo and Mackinlay (1988) proposed the use of the variance ratio test to assess whether returns on securities are predictable or not. In this test, the authors compared the variance of the time series difference during different intervals. If it is assumed that there is a random walk in the time series, this means that the variance of the period q should be q times the variance in relation to one period of the difference. The variance ratio test is used when testing a random walk under the assumption of homoscedasticity, i.e. that the variance of the random error is constant for all observations, as well as heteroscedasticity, which means that the variances of the random errors differ for the analyzed operations, as well as using the asymptotic distribution. In an article, Chow and Denning (1993) proposed multiple variance ratio tests. The multiple variance ratio test is similar to the previously described variance ratio test, with the difference that the variance ratio test provides individual results for each interval, while the multiple variance ratio test calculates the joint probability, an aggregate indicator. If the variance ratio test is equal to one, then it means that the security follows a random walk, and the null hypothesis that the market is efficient is accepted.

4. Results

The first step in the empirical analysis was to calculate the weekly and monthly returns for the analyzed indexes. After the returns have been calculated, their characteristics are shown with descriptive statistics: mean value, minimum and maximum return, standard deviation and asymmetry. Descriptive statistics are given in Table 1.

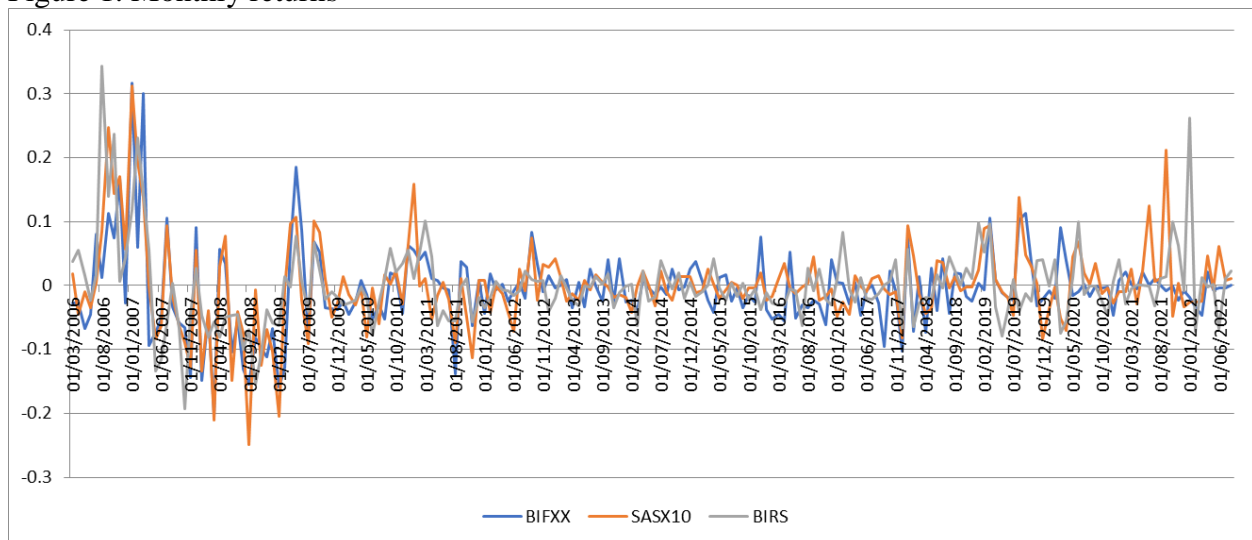
Table 1. Descriptive statistics, monthly returns

	BIFXX	SASX10	BIRS
Mean	- 0,0061	0,0000	- 0,0010
Standard Deviation	0,0634	0,0673	0,0610
Sample Variance	0,0040	0,0045	0,0037
Kurtosis	6,1506	4,6916	8,2279
Skewness	1,1243	0,6409	1,7418
Range	0,5193	0,5617	0,5351
Minimum	- 0,2018	- 0,2491	- 0,1922
Maximum	0,3175	0,3126	0,3429
Count	198	198	198

Table 1 provides an overview of descriptive statistics for the analyzed three indices. The average monthly return during the analyzed period for each index was around 0. As for the minimum and maximum return, it ranged from negative 0.20 to positive 0.34. The returns were generally similar for all three observed indices. In the next step, using data on weekly and monthly returns, and applying the previously mentioned tests, it was examined whether the financial market in B&H follows a weak form of market efficiency.

The movement of monthly returns for the analyzed indices is shown in Figure 1.

Figure 1. Monthly returns



It can be noticed that the returns of all three indices reacted to the financial crisis of 2008/09. when slightly higher volatility was observed. Also, volatility is noticeable during 2020/21. mainly under the influence of the Covid19 pandemic. These results indicate that the domestic market is not

isolated from the global market, and to a greater or lesser extent, world trends are maintained in the domestic market as well.

Table 2 shows the results of the four tests used for the three analyzed indices. The data examined on this occasion are with a monthly frequency.

Table 2. Testing the weak form market efficiency, monthly data

Test	BIFXX	SASX10	BIRS	Random walk
Autocorrelation Durbin Watson	2.080	2.110	2.080	Yes
Runs (p-value)	0.318	0.020	0.000	Yes for BIFXX No for SASX10 and BIRS
ADF test (p-value)	0.000	0.000	0.000	Yes
Variance ratio (p-value)	0.000	0.000	0.090	No for BIFXX and SASX10; Yes and for BIRS

The tests that examined the weak form of market efficiency in BiH assess whether there is a random walk in the returns of the analyzed indices. If there is no random walk, then we conclude that the market operates in a weak form of efficiency market.

The results show that the autocorrelation test and the ADF test confirms that there is a random walk, and we conclude that the market does not follow a weak form. Instead, there is some mild form of market efficiency. However, the other two tests do not show that there is no market efficiency – the market does not follow a random walk. The results give us a quite mixed outcome. However, we cannot conclude that the financial market in B&H follows market efficiency. We can suggest that there are some improvements in the sense that the market is becoming more active and thus more efficient. Therefore, the tests used in the analysis indicate a mild form of market efficiency.

Although some tests indicate that the financial market in B&H overcame the weak form of market efficiency, this is still not enough to conclude that there is some form of market efficiency.

Table 3 shows the analysis of weekly data.

Table 3. Testing the weak form market efficiency, weekly data

	<i>BIFXX</i>	<i>SASX10</i>	<i>BIRS</i>	<i>Random walk</i>
<i>Autocorrelation Durbin Watson</i>	<i>2.010</i>	<i>1.980</i>	<i>2.018</i>	<i>Yes</i>
<i>Runs (p-value)</i>	<i>0.000</i>	<i>0.050</i>	<i>0.000</i>	<i>No</i>
<i>ADF test (p-value)</i>	<i>0.000</i>	<i>0.000</i>	<i>0.000</i>	<i>Yes</i>
<i>Variance ratio (p-value)</i>	<i>0.000</i>	<i>0.000</i>	<i>0.000</i>	<i>No</i>

The results are more or less similar to the monthly data. The autocorrelation test and the ADF test for all these indices show that they follow a walk operation, while the runs test and the variance ratio for all three tests show that there is no random walk. Again, the conclusion is the same, which

is that the market in Bosnia and Herzegovina has gradually overcome the weak efficiency market, but this is still not enough to claim that it is a market that operates in an efficient manner.

5. Conclusion

This paper adds to the body of literature examining the stock market efficiency of post-transition economies. Stock markets of post-transition economies are known for their speculative nature, and therefore, question the lack of their efficiency. This paper examined the efficient market hypothesis in Bosnia and Herzegovina financial markets and started from the hypothesis that the financial market in Bosnia and Herzegovina follows weak forms of efficiency. Testing was carried out using data from stock market indices from the Sarajevo and Banja Luka Stock Exchanges, namely the BIFXX, SASX10 and BIRS indices. The analysis includes weekly and monthly data from February 2006 to August 2022. Testing of the weak form of market efficiency in Bosnia and Herzegovina was performed through four statistical tests: autocorrelation test, ADF test, "runs" test and variance ratio test. The results of four statistical tests show that it cannot be fully claimed that the financial market in B&H is weakly efficient. The autocorrelation test for all analyzed indices, and for all observed periods, rejected the hypothesis of a weak form of market efficiency. The other tests gave mixed results. Some of them confirm market efficiency and some do not. These results lead to the conclusion that the financial market in B&H is not completely inefficient, but that in some cases it shows signs of mild efficiency.

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DIGITAL TRANSFORMATION IN THE AUDIT PROCESS - CHALLENGES AND THE NEW ROLE OF AUDITORS IN IT ENVIRONMENT

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Abstract

Companies in Bosnia and Herzegovina mostly base their business on the application of information technologies (information systems), and their use has largely increased productivity and substantially changed business processes. From traditional data processing, recording of business changes, and automation of standard financial reports, information systems have been upgraded with the functionalities of artificial intelligence (AI - Artificial Intelligence), that enable the use of data from various storage bases (Data Warehouse), and convert them into information, on which basis management makes business decisions. Systems that offer greater possibilities, also carry greater risks of manipulation and abuse, so it is necessary to provide permanent supervision over the information system. Supervision can be organized within the company or be part of an external information system check.

Through the publication, the authors will explain how information systems in accounting were developed, how the digital transformation affected accountants and auditors of financial statements. Furthermore, the authors will explain the auditor's approach in the conditions of digital transformation in accordance with international audit standards. The aim of the work could be divided into three parts. The first goal is to explain how accounting information systems work in Bosnia and Herzegovina, the second goal is to elaborate on the auditor's role and his approach, and the third goal is to explain the characteristics of software solutions used by auditors.

Keywords: Digital transformation, Audit, Information systems, Accounting, Data

JEL classification: Accounting and Audit

1. Introduction

Companies in Bosnia and Herzegovina mostly base their business on the application of information technologies (information systems), and their use has largely increased productivity and substantially changed business processes. In order to reach the stage of productive use of all the benefits that technology offers, company needs to overcome numerous challenges, from introduction to full integration. The introduction of a new information system implies a series of related steps. Foremost, the company must allocate certain financial resources for the procurement of the adequate information system. In addition to financial expenditure, this often implies a change in the way of working, i.e. adjusting their own business processes defined by the business processes of the information system (the best example is an ERP solution that offers

SAP)³². This is followed by the process of implementing the information system that depends on a large number of different factors (the complexity of the system, implementer experience, the ability of the company to adopt new work methods, etc.), and lasts for a long period of time. After these two steps that are mentioned, there is a period of adaptation to the information system, during which users should fully master the application. The fourth question or challenge that companies must answer is the question of the security of information, generated by the system, which may be subject to manipulation and abuse. This challenge can be considered a more recent, considering that the number of tasks which can be implemented using information systems is rapidly growing, and the application of new forms of communication is pushing, to the forefront, the issue of security information. From traditional data processing, recording of business changes, and automation of standard financial reports, information systems have been upgraded with the functionalities of artificial intelligence (AI - Artificial Intelligence), that enable the use of data from various storage bases (Data Warehouse), and convert them into information, on which basis management makes business decisions. Systems that offer greater possibilities, also carry greater risks of manipulation and abuse, so it is necessary to provide permanent supervision over the information system. Supervision can be organized within the company or be part of an external information system check. Whether the company has decided on external or internal supervision, it is important that the process is based on the principles of International Quality Control Standards and relevant ethical requirements.²³³

If we would observe the information system and the previous consideration through the prism of the audit process, we could conclude that the importance of information technology (information systems) for the audit process is reflected in at least three elements. The first one refers to the accounting sector that uses an information system in its work, and whose products (the ledger, incoming and outgoing invoices books, a set of financial reports, various analyzes and others) are used during the process of auditing financial statements. The documentation that the auditor receives, and on which basis conducts audit tests and procedures according to International Auditing Standard 230 (IAS 230)³⁴, are part of the auditor's working documentation, and the company is responsible for their accuracy, and confirms it with a letter (statement of the management) delivered to the auditor. The Management Board is the one who make certain claims through the financial statements, and the auditor's task is to confirm or deny the management's

statements during the audit process³⁵. The second element is reflected in the revision of the information system. In a situation of using advanced information systems as we have today, it is necessary for the external auditor to make a step forward in relation to the traditional audit of financial statements, and pay special attention to the audit of the information system. If the information system and the way it generates data or reports are ignored, the company, whose financial statements are subject to audit, can very easily use manipulative actions with the aim of creating a wrong perception, which will result in inadequate planning of the audit process, and thus a wrong audit report. Of course, the task of the auditor is to recognize these phenomena and take all adequate actions, so that the audit process is carried out in an appropriate way, and to issue adequate audit report. While the first two elements are directed towards the company in which the audit is conducted, the third element refers to the use of application solutions, with the help of auditors which perform the audit process. In the continuation of the work, we will

³² ¹SAP ERP – one of the largest manufacturers of ERP solutions observed globally

³³ ²International standard on Quality Control 1: Quality Control of Firms That Audit, Review Financial Information, and Other Assurance Engagements, and Related Services, (2009).

³⁴ ³International Standard on Auditing 230 – Audit Documentation

³⁵ ⁴Božić, R.; Kondić, N. Audit of Financial Statements - a guide to practical auditing, third, amended and supplemented edition. Banja Luka: Faculty of Economics and Finance; p. 67 (2012).

explain the relationship between the audit of financial statements and the audit of information systems to indicate to interested parties the synergistic effect between these two types of audit. Also, we will explain the importance of information technologies (software tools) that auditors use during their work.

2. Information systems in accounting

2.1. Stages of information system development in accounting

In the literature it is emphasized that there are several stages of development of information systems in accounting. The first phase was based on paper documents and there was no interconnection of databases. The second phase is distinguished by personal computers. Paper documents were available in electronic form, but only with the possibility of viewing the documents. The data was stored on servers or personal computers, and the biggest problem was data redundancy. The third phase included a system of electronic databases based on relational databases, which enabled users to connect to a single network, access and manipulate databases. This way of working has enabled companies to integrate business processes and significantly improve the previous way of working. The fourth phase, which is at the beginning of development in our region, is characterized by the application of business software solutions of the ERP class (ERP - Enterprise Resource Planning), which include the application of web technology (World Wide Web). The most significant advantage is the high automation of business processes, that is widely available to users through Cloud technology³⁶ and the Internet at relatively low usage costs (renting). The fifth stage of development, that has been in use for a long time in highly developed countries, is characterized by the use of artificial intelligence (AI - Artificial Intelligence), and requires from accountants to have different knowledge compared to what they have today, that enables them to have high work productivity³⁷. New knowledge will be focused exclusively on the application of information technologies, while a large part of standard accounting processes will be automated and performed by machines.

2.2. Information Systems in Bosnia and Herzegovina - accounting department

Larger companies in our region, with the introduction of information systems, have relatively well organized their accounting departments, primarily thanks to the fact that they were "forced" to adapt their business processes to one of the modern ERP solutions. The accounting system is organized in a way that through the accounting information system is collected, and then automatically processed data from the field of accounting planning, analysis, control, reporting, etc. All this generates valid, timely and quality information that can be published in the form of financial reports to different stakeholders. Also, the assumption is that the information does not contain materially significant errors, and that the management can rely on it when making business decisions. It is important to note that here we are talking about those companies that need to use more complex information systems, and that could be classified into the category of large or medium-sized legal entities.

There are many different information systems on the market of Bosnia and Herzegovina, and the selecting one of the offered depends on a number of factors, such as the size of the company and the complexity of business processes, the possibility of investing, the activity the business entity

³⁶ ⁵Mihajlo Travar, Saša Ristić, Igor Dugonjić – Analysis of Using Cloud Business in Bosnia and Herzegovina and the Region, JITA, Paneuropean University APEIRON, Banja Luka, (2019).

³⁷ ⁶Thomas H. Davenport – The power of advanced audit analytics - Everywhere Analytics, Deloitte Development LLC, (2016).

is engaged in, etc. By choosing the systems that fall into the category of ERP, companies will achieve the integration of a complete business system. This effect is possible considering that the systems base their work on unique databases that are available to all system users. ERP is always divided into a number of different logical units (modules) that are interconnected. Image number

1. shows the basic and most common set of modules (each of them contains a number of different subfunctions). The basic part is further upgraded depending on the needs of the company that implements the ERP class solution.

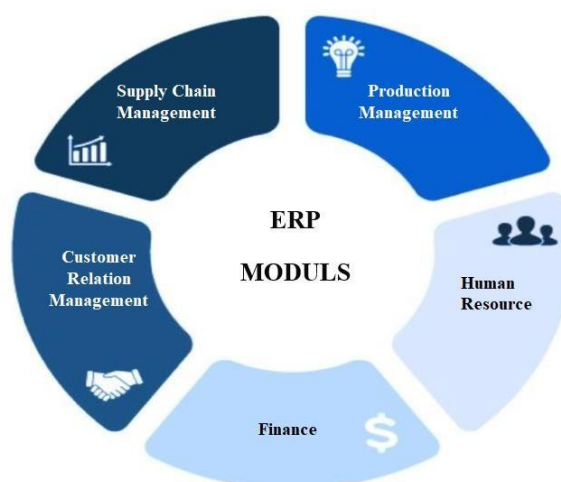


Image no. 1.– Standard set of ERP solution modules

In the largest number of professional and scientific papers, on the topic of information systems, ERP systems, digital business transformation, the future of the accounting profession, etc., it is written about the functionalities and benefits that software solutions bring to users. The topic that is rarely mentioned and which is implied by the application of ERP solutions, is in compliance with all legal regulations of financial reporting. In the context of this paper, where the audit of information systems is one of the key hypotheses we are considering, it is important to present the possibilities or impossibilities that the systems offer. Accountants who have worked or are working on older information systems often have the opportunity to retroactively correct their work. In practice, one of the most common requirements of accountants when implementing a business system, is the possibility of retroactive posting in the system, providing that there is no trace of the mentioned actions. This type of work must be supported by the developers who constructed and implemented the business system for the user, and it works in a way that the accountant or developer "unlocks" the document and then makes corrections in the background of the application. The simplest example of such an action may be the correction of a posting order that was posted and closed in one period of time, and then subsequently corrected, which is certainly not in accordance with IAS 8³⁸. ERP class systems, on the other hand, do not offer such possibilities, and they are organized exclusively in accordance with prescribed rules of business bookkeeping.

3. The influence of information systems in audit planning

As information systems directly affect the process of accounting recording and reporting, they also indirectly affect the audit process and the formation of an audit opinion. With the

³⁸ International Accounting Standard 8 - Accounting Policies, (2008).

introduction of information systems on a growing scale, there is a change in the comprehensiveness of the audit and the way the audit is implemented. The use specialist in an information systems is necessary, because his findings are important for creating an audit program, i.e. defining the nature, time and scope of the audit in accordance with IAS 300³⁹. IAS 315⁴⁰ in paragraph A63 outlines the ways in which an information system can contribute to increasing the efficiency and effectiveness of an internal entity control, which directly affects the audit program:

- consistently applies predefined business rules and performs complex calculations when processing large amounts of transactions or data,
- increases the level of timeliness, availability and accuracy of information,
- provides additional analysis of information,
- increases the ability to monitor the performance of the entity's activities and its policies and procedures,
- reduces the risk that controls will be circumvented,
- increases the possibility of achieving effective segregation of duties by implementing security controls in applications, databases and operating systems.

On the other hand, information systems carry with themselves specific risks related to the internal controls of the company, such as:

- relying on systems that inaccurately process data or process data that are inaccurate,
- unauthorized access to data that may lead to destruction of data or unauthorized data changes, including recording of unauthorized or non-existent transactions or inaccurate recording of transactions. Special risks may occur in cases where multiple users have access to a shared database,
- possibility that employees in the IT sector acquire access privileges to a greater degree than necessary to perform the duties assigned to them, which violates the duties segregation system,
- unauthorized changes to data in master files,
- unauthorized changes in systems or applications,
- failure to make necessary changes in systems or programs,
- inappropriate manual interventions,
- possible data loss or inability to access data in the required way⁴¹.

In order for the company to respond to the mentioned risks, the International Auditing Standards predict implementation of two types of controls. The auditor is the one who should investigate whether the company has responded appropriately to the potential risks arising from the application of information technologies by establishing effective general IT controls and application controls. The auditor of information system control should perceive it as effective, if they ensure the integrity of the information and the security of the data that the systems process under the condition of synergistic action of general IT controls and application controls.

General IT controls include policies and procedures that relate to applications and support the effective functioning of application controls. These controls apply to the central unit, peripheral unit, and end user. General IT controls that ensure information integrity and data security most often include controls over the operation of the data center and networks, system software, access security, maintenance of application systems, etc. Application controls are manual or

³⁹ ⁸International Standard on Auditing 300 – Planning the Audit of Financial Statements, (2009).

⁴⁰ ⁹International Standard on Auditing 315 – Identifying and Assessing the Risks of Material Misstatement through Entity Understanding, (2009).

⁴¹ ¹⁰IT Audit Manual, Grand Thornton

automatic procedures that most often function at the business process level. Application controls, by nature, can be preventive or detective, and designed to ensure the integrity of accounting records. Consequently, application controls refer to the procedures for initiating, recording, processing and reporting on transactions or other financial data. These controls contribute to the assurance that transactions have occurred, that they have been approved, and that they have been approved and that they have been fully and accurately recorded and processed.

4. Characteristics of information systems in the audit process

The functionalities of information systems have advanced in recent years to such an extent that they have enabled a large number of companies to fully digitize work documents and automate business processes. In order to adequately perform the audit process, auditors must adapt their methodology to new circumstances. Although the overall control objectives have not changed, many controls are automated today, so the auditor must verify their effectiveness through the information system.

From the audit point of view, it is important that information systems have a control mechanism implemented in them, considering that the system can enable data duplication, concealment of certain processes that are performed, unauthorized access to databases, etc. The auditor's task is to test compliance and perform substantive testing through IT controls. Through compliance testing, the auditor should determine whether the control is applied in the manner described in the program documentation, respectively, whether the control is consistent with the management policies and procedures adopted by the company. Substantial testing serves for the auditor to examine the adequacy of existing controls and confirm the accuracy of certain transactions or activities performed by the system. When performing an IT audit, the auditor needs to consider the following phenomena⁴²:

- *Unauthorized access to data, correction of data and application code*: the application should have different levels of authorization or usage rights that clearly define the set of functionalities that each user can have. When an application moves from test to production, designers of information system and programmers should no longer have access to programs and data without user approval. If access to them is provided, each of the activities would have to be recorded, reported and reviewed by an independent entity. Any different treatment of unauthorized access carries the risk of information leakage and misuse of available information. Application software and transaction data can be protected by applying appropriate logical and physical access controls. Physical controls primarily refer to the protection of the hardware component through the installation of barriers for access to buildings, server rooms, and all devices that support the application. Logical access controls, such as user authentication and authorization, apply to software access.
- *Automatic data processing and unusual transactions*: information systems can automatically perform transactions, and it is necessary that evidence of these actions be recorded and visible. As was the case with manual modes of operation, unusual transactions increase the inherent risk. It is necessary to examine whether applications that perform unusual transactions are subject to the same procedures as applications intended for routine transactions.

⁴² ¹¹IT Audit Manual, Grand Thornton

- *Greater risk for undetected misstatements*: servers store information in electronic form, which requires reduced manual data processing and human intervention. If the system is not adequately set up, there is a danger that individuals will gain access to sensitive information and make data corrections without visible evidence.
- *Modification - application upgrade*: there is a possibility of unauthorized modification of the application, which can be prevented by introducing appropriate control mechanisms such as: access control, activity logging, separation of tasks between developers, administrators and end users.
- *Unauthorized remote access and hardware communication method*: modern operating systems have the ability to control access to systems whose goal is to restrict remote users from viewing or working on data. The controls that are defined this way can be upgraded with additional identification and authentication controls within the application. Also, networks that enable communication between a large number of processing units increase the risk of illegal access to data, so confidential data should be encrypted.

The mentioned phenomena are among the most significant for the establishment of quality controlsystems on the basis of which the auditor draws a conclusion about the existing risk and further defines the audit plan. During the IT audit process, the auditor should discover possible system deficiencies that could materially affect the audit report.

5. Application solutions used by auditors

In contrast to information systems where there is a wide range of different solutions, the number of applications intended for auditors is far less, observed at local and global level. The nature of the work and the number of functionalities that auditor requires within the application solution, could be brought under solutions that mostly correspond to document management systems - DMS⁴³. DMS should enable the user to monitor the "life cycle" of work documentation, starting from the entry of documents that can be in different formats (.doc, .pdf, .tex, .xls, etc.) through the possibility of multiple users working on the same documents, up to final archiving of documentation. For the needs of the audit process, systems similar to DMS are most often upgraded with functionalities that are in accordance with the defined audit steps. This means that the system was created to enable a clear separation (sorting) of documentation depending on which phase of the audit is being performed. The best option is to define a Workflow (business process) that will guide the user through different parts (by phases of the audit process) that are mutually conditioned. In this situation, the software will require the auditor to fully complete one phase of the audit before proceeding with the next.

In addition to the mentioned software tool, it is currently more important for auditors to know tools that enable working with large databases and their analysis. This is especially pronounced in situations where it is necessary to perform testing and sampling of a population that includes several hundreds of thousands of rows. Testing all samples is impossible, so the application of any of the statistical tools that is based on different criteria such as: defined materiality, population size, audit risk, defined controls, significant items that are repeated in the population, items with significant amounts, etc., select a group of items for testing. If the auditor would not use these tools, but would, for example, select samples based on a professional audit assessment, this would require time for manual operations, that would question the profitability of the audit. The advantage of the tools we are talking about is that the licensing for the basic set of tools is

⁴³ DMS – Document management system

relatively affordable and is part of the Microsoft Office 365 package. Also, it is relatively easy to access more advanced systems that enable more productive work with databases.

Conclusion

According to considerations that we have presented, we could draw a number of different conclusions, and one of the most important is that the accounting and auditing professions have already experienced significant changes under the influence of technology, and it is quite certain in which direction the profession will move. Given the decreasing number of manual operations and the fact that a large number of jobs in accounting are automated, the accountant's job will be more reduced to routinely giving commands to the system and entering mandatory parameters for the system to generate reports. Today, we already have negative consequences of this way of working, considering that accountants in some situations do not need to know accounting policies or the background of the functioning of information system in order for it to function effectively. It is enough that they know the data entry form and master the information system. The positive effect that this situation will bring, in addition to productivity, will be the possibility for accountants to deal more with controlling, reporting and data analysis. Of course, this implies the adoption of new knowledge that will bring standard accountants closer to the tasks of financial analysis.

The audit is based on the data provided by the accountants, so the productivity of the auditor is partly determined by the quality of that data. As accountants increasingly use information systems based on various control mechanisms, the audit process will change, and increasingly be a combination of standard audit processes and information systems audits.

Source:

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CAROUSEL FRAUD

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Abstract

The 21st century is marked by numerous financial frauds, which are the result of global integration. This did not bypass the European Union either, so the advantages provided by this global market were used for enormous enrichment. Among the different forms of fraud, the so-called carousel fraud stands out. Carousel fraud is considered to be the most serious form of VAT fraud in the EU. Carousel fraud is one of the most significant forms of so-called MTIC fraud. It is about VAT fraud in the EU, so it is estimated that through these systematic forms of fraud, Member States lose 100 billion euros per year (Buterin, et al. 2014). For these types of fraud, the concept of fraud within the community by a trader who disappears is also used (MTIC-missing trader-intra community fraud). This type of fraud includes the following mandatory elements: transactions by companies in at least two Member States, a large number of buying and selling transactions by several companies in a short period of time in order to conceal the real intentions, the subject of sale are very expensive goods, and at least one missing trader. Of course, the basic assumption for this type of fraud is the absence of the obligation to pay VAT on the sale of goods within the EU. Fraud is most often associated with organized crime, that is, organized groups that carry out tax fraud throughout the European Union and choose countries for their operations where the fight against VAT fraud is less effective. In order to protect the state budget and prevent VAT fraud, tax administrations continuously implement measures to detect companies that participate in tax fraud, and try with all their might to introduce systems that allow for early detection of tax fraud (VIES system, EUROFISC). As it is difficult for tax administrations to monitor the imagination of organized crime, frauds are most often discovered when the tax budget has already been damaged. This article aims to clarify what can be done to prevent this type of fraud.

Keywords: caruospel fraud, VAT, missing trader, tax evasion, MTIC.

JEL casification: K

1. Introduction

Frauds in the economic and especially the financial sector are not something new, especially nowadays. Financial fraud is considered to be the biggest threat to the world economy. This is especially true for frauds in the financial sense, where news about frauds in the economy, embezzled billions of euros or other currencies appear every day, but no one questions how this could not have been noticed through numerous financial reports, control of the tax administration, regular and extraordinary audits, or activities of various state regulatory bodies to which financial reports are duly submitted. This particularly applies to the entire financial sector.

The unification of Europe opened the door to a large market that was supposed to facilitate and simplify the flow of goods, services and capital. These are the pillars on which the functioning of the EU is based. Of course, the enlargement of the EU has also increased the possibility of abuse of the benefits offered by the customs-free union. Namely, although the EU abolished borders and made it easier to cross internal borders between members, the members themselves remained independent both within their geographical borders and in the adoption and enforcement of certain laws that are slow and ineffective in relation to the speed of financial fraud. Carousel fraud is one of the most significant forms of value added tax fraud in the EU. It is estimated that because of them, the member states lose approximately 100 billion euros per year. The appearance of carousel

frauds is caused by the shortcomings of the taxation system of the EU members. In the value added tax calculation system, between the EU member states that participate in fraud, the shortcomings of this system, which has been in use in the EU since January 1993, are used. Then a common market was established and all obstacles to duty-free business between member states were abolished. The very freedom of movement of goods and capital led some "entrepreneurs" to the idea of using this technique for this special type of financial fraud.

The value added tax system, which came into force at that time, was designed so that the tax is calculated at the end member at the rate and conditions that apply to it. The method of taxation of such transactions is basically taxation as in the case of export from one country and import into another EU country. Such sales of goods between EU member states are subject to zero-rate taxation. This method of taxation is justified in that it equalizes imported and domestic products in the tax sense, because for the production of domestic products, VAT was used as the so-called input tax. This system was considered temporary until a new solution was adopted, but it is still in use today and enables carousel fraud because the supplier has the right to deduct input VAT or refund input VAT when exporting to a member state.

The appearance of these types of transactions and frauds within the EU tax system, and not only within individual members, led to the reaction of the EU bodies, so that the Office européen de lutte anti-fraude (OLAF) was established for coordination among members and greater flexibility in detecting financial fraud. In addition, in order to prevent other forms of fraud, two special systems related to their detection were formed. One is VIES and the other is EUROFISC. More will be said about them in the continuation of the presentation.

2. Prerequisites for carousel fraud

Regarding the prerequisites for the execution of some form of carousel fraud, they are, for the most part, predetermined, in the sense that there should be legal prerequisites for their execution. It seems somewhat illogical that some legal act creates the preconditions for the execution of some form of fraud. It is about fraud perpetrators using legal presumptions to create illegal activity. This means that it is impossible to create a legal solution that would exclude in advance the possibility of creating some kind of fraud. The perpetrators themselves are aware that their illegal behavior hides a great possibility of being sanctioned in several ways. As a rule, the material challenges are much greater and there is a conscious effort in advance to realize an illegal benefit.

Prerequisites for the possibility of performing carousel fraud could be classified as:

- a) existence of the VAT regime in the taxation system;
- b) at least two registered companies in two different EU member states;
- c) the existence of goods that are the subject of trade;
- d) realized turnover between at least two economic companies (purchase and sale);
- e) existence of zero VAT between at least two observed countries in the first transaction;
- f) the existence of a transaction in the country of the buyer of the goods in question that is taxable with VAT;
- g) properly declared VAT liability with the seller within the country;
- h) properly declared input tax with the buyer of the goods in question in the country;
- i) orderly payment of the purchase price by the buyer including VAT;
- j) a closed "transaction" in that the seller of goods in the country does not fulfill the obligation to pay the VAT that he received on his account.

From the above, it is quite evident that in the case of the simplest form of carousel fraud, the circle of enumerated actions is closed (performed) quite simply. If one were to take into account an average number of trading transactions, e.g. within the EU, it is very difficult to prevent this kind

of fraud. It is estimated that hundreds of millions of transactions take place annually within the EU, and it is estimated that one out of every 10,000 companies participates in carousel fraud (Hulot, 2013). The only link could be made in the event that carousel fraud is detected to investigate the buyer's company (within the member country) to determine if there is a link with the seller of the goods in question. Such an action by the tax authorities would be completely justified given the volume and value of this type of transaction.

3. Risk indicators

Any company faces risks during its activities. There are various ways in which the concept of risk can be defined. Common to all definitions is the uncertainty of the outcome, that is, the occurrence of risks. One of the ways of defining risk is as the possibility of partial or complete prevention of the realization of goals due to the occurrence of undesirable risk effects such as: financial loss, insolvency, non-payment of obligations to the state, etc. In the economic sense, risk represents a form of danger that appears due to the occurrence of undesirable influences that may result in a decrease in the value of assets, or ultimately the opening of bankruptcy, liquidation, etc. Within the business, risk can be expressed as the possibility of adopting the wrong decision due to the presence of unfavorable events, as well as due to scheduling of human factors that result in damage. In business finance, risk represents an obstacle between doing business and achieving the expected results. Risk always has the possibility of quantification, so it can be included in business costs. Measurement, assessment and quantification of risk is achieved using methods such as theoretical distribution, sensitive analysis, and simulation methods. There are also a number of risk indicators in the area of carousel fraud. Some of them are:

- a) the supplier, as a rule, comes from another EU member entity (state);
- b) the operator has no business history;
- c) the supplier often changed owners;
- d) the supplier has recently changed owners;
- e) the supplier does not have a valid VAT number at all;
- f) the operator refuses to provide data on responsible persons;
- g) the supplier avoids personal contact;
- h) the supplier does not want to submit a declaration of goods for imported goods, or does not have it at all;
- i) the supplier offers goods significantly below the market price;
- j) the supplier does not leave a phone number or any other contact for business communication;
- k) the supplier gives instructions on payment of goods to another business entity;
- l) the owner's checks show that the owner had a number of companies that were registered with tax debt or that were declared bankrupt;
- m) the supplier does not know the goods he is selling;
- n) the supplier offers you to sell his goods with a safe and constant profit, to the customers he will provide for you, with the explanation that he does not want to expose himself for some reason;
- o) the supplier operates from an address where many companies are registered;
- p) the supplier wants to do business with cash;
- q) the supplier provides dubious or unclear information about his business, business history;
- r) the business relationship or purchase is unnecessarily complicated by the involvement of other related or unrelated entities.

Regardless of which of the previously listed transactions it is VAT fraud can be interpreted in two broad categories, depending on whether the undue payoff consists of reduced tax liability (tax evasion) or embezzlement of VAT (failing to remit the VAT due and/or false claims of tax credit), or both. Another classification is based on the complexity of the scheme: whether the fraud involves only a domestic or an international (intra-community) component, a single operation or a carousel chain of transactions (Financing of Organised Crime, 2015).

4. Types of carousel fraud

All types of these frauds are now collectively called missing trader-intra community fraud (MTIC). MTIC frauds represent a systemic attack on the tax policy of taxation through VAT discovered in numerous EU member states. In essence, fraudsters register in the VAT system in order to be able to purchase goods from another EU member state tax-free. After selling the goods at a price including VAT, these companies disappear without paying the VAT that they charged the customer. Fraud is usually carried out very quickly and the perpetrators disappear before the tax authorities can react in the regular tax procedure. The possibility of tax fraud is greater if the VAT system is not complicated, or if the VAT rate is uniform.

We see that it is characterized by Missing Traders that they do not have employees, that they do not have their own business premises, that they do not have a long history of business, that they have no business assets that could be seized, have no other means of paying for claims, etc. It is because of these characteristics such economic societies represent the interest of tax bodies dealing with regular supervisory activities. On the other hand, the founders and responsible faces of such societies are generally unavailable or ignorant, indulged or even business -incompetent. Often these are faces with a fictitious residence or a person whose identity with the help of stolen or assigned documents is abused. They often come from other countries -upstate countries with false documents, etc.

There are two basic types of MTIC fraud, these are:

- a) Carousel fraud and
- b) Acquisition fraud and hybrid synonym of contra trading (Buterin, et al. 2014).

Carousel fraud is also called a financial fraud that results in damage to the state budget abuse of VAT calculation system. This is especially pronounced in EU Member States, which was already discussed. The goods or services are obtained at the zero VAT rate from EU Member States, which at the very beginning gives priority to creating abuse. The acquirer of sales goods with VAT included and disappears before paying VAT to the state, and the end customer claims the pre-state VAT from the state. The procured good is again sold to a large number of societies. The goods never end up in retail in the domestic market, that is, they do not become available for consumption, but return them fictitiously or really to a country of origin, or are used to launch a new fraud chain where the name of a carousel fraud is encouraged.

Acquisition fraud implies the sale of imported goods at a zero VAT rate on the domestic black market. The importer does not charge VAT after sale on taxable delivery, which can sell goods cheaper than other market participants. Because it does not charge VAT directly damages the state budget. In this case, the crime is easily evident, so the processing is easier.

Contra Trading Fraud is to prevent the detection of MTIC fraud. The perpetrator often tries to cover up the fraud by complicating the ways of trading. One of the ways described is the so -called Contra Trading. The term counter trader refers to a taxpayer participating in two separate types of chain transactions, one type of transaction is legal, and is carried out with the aim of covering up a carousel fraud. The counter trader is always the buyer in the transaction in question who duly pays the amount of VAT charged to the seller and reports the existence of input tax. The mentioned determination of the potential connection between the seller and the buyer within the same

member country would be the most important step in detecting the existence of carousel fraud. Of course, this is also part of the way to prevention and prevention of this type of fraud.

Of course, there are other "models" of fraud that are based on avoiding the payment of VAT. The next common model is a fictitious export, when a trader performs an export transaction on paper, calculates a zero VAT rate and demands a VAT refund from the tax administration, while at the same time selling goods on the domestic market without an invoice. Corrupt customs officers usually participate in this, as they prepare the documentation necessary for export and convince illegal entrepreneurs that the transaction will successfully pass all controls. A much more modest version of this approach relies on overestimating the quantities of commodities that are easy to handle, such as sugar, grain and fuel. There are other forms of fraud and evasion, such as fictitious invoices and misuse of the customs procedure when transporting goods. The form of fictitious accounts is quite simple and most often refers to companies in the official economy that want to reduce their obligation to pay VAT. The invoice issuer can be registered by an accounting service or it can be issued by a criminal group that operates completely outside the law and usually charges a fee for its services (Bejaković, 2016).

5. Goods that are subject to carousel fraud

The goods involved in these types of illicit transactions are usually high-value and small-sized goods. These are goods that are in demand on the market and, usually, are recognizable brands in a certain industry. As an example, we can take portable computers (lap top), tablets, computer parts, mobile phones, cosmetic products, gold, jewelry, watches, etc. For the perpetrators of carousel fraud, it was important that the goods were in demand on the market, that is, easily traded, expensive and easily transportable. To some extent, such frauds can be reacted to by traditional methods of tax supervision, because the trail of the goods can still be followed more or less effectively, the goods can be confiscated, and the perpetrators detained. Lost VAT can rarely be recovered, but it was still possible to counter fraud to some extent (Buterin, et al. 2014).

The question arises as to what is an intangible asset? The question is, can she be the subject of these types of fraud? For example, after the entry into force of the Kyoto Protocol in 2005, trade in certificates intensified, so-called carbon credits certificates-CO₂. This trade did not take place only among companies that had a surplus or deficit of these certificates, but investment and pension funds, banks, insurance companies and other traders and speculators actively participated. In 2009, the turnover of these certificates was more than 100 billion euros, and according to data from 2011, the turnover was more than 129 billion euros (Report: World Bank, 2012:10).

These certificates are an example of an intangible asset that disappears from circulation after use and is very difficult to trace once it crosses the border. Soon, the perpetrators of carousel fraud joined the trade in CO₂ certificates by importing them without VAT from member countries and then selling them on the domestic market. This example shows how effective actions of the state, that is, tax authorities, can prevent further illegalities. Thus, the Netherlands immediately changed the tax law for these transactions so that instead of the seller, the person liable to pay VAT became the acquirer, which made trade in certificates in that country no longer suitable for carousel fraud. This is called the reverse charge mechanism VAT. Immediately after that, trade in said certificates almost stopped, which meant that the measure was completely justified.

In the last few years, VAT fraudsters have been turning their attention to the area of energy and carbon dioxide pollution permit trading (Frunza, 2013)¹⁰. According to a report by Europol (2013), fraudulent companies have managed to seize about 90% of the total trade in carbon dioxide pollution permits, while they manage to illegally obtain large sums of VAT. Further frauds are associated with computer programs suitable for their intangible nature and possible easy and quick transfer. Frauds with intangible assets are often committed with the help of large financial institutions that, knowingly or unknowingly, approve financial assistance (Bejaković, 2016).

6. The possibility of circular fraud in Bosnia and Herzegovina

It is evident from the above that the current VAT collection and calculation regime, within the framework of the EU, is almost "ideal" for circular fraud. This is particularly and dominantly related to circular trades where goods cross the border between EU member states. The justified question is whether circular fraud is possible in Bosnia and Herzegovina, given that the import of the largest number of goods is taxable with VAT. Thus, we single out the following opinion, the current system of VAT is based on the declaration of the resulting output tax with the subtraction of the input tax that can be deducted. Namely, every invoice is like a check. An indirect tax payer who receives an invoice can ask the Indirect Tax Administration for a refund of the output VAT shown on the invoice by another payer.

For this reason, monthly VAT returns are submitted, in which they report the output VAT that they need to pay to the Tax Administration. The VAT obligation must be paid within the stipulated time limits, and accordingly the Administration pays out funds upon requests for input VAT refund. This principle of self-taxation is based on trust towards the taxpayer, which unfortunately is not always justified. Throughout Europe, fraud in the VAT system is taking on incredible proportions, and all frauds have in common that they are characterized by either non-declaration and/or non-payment of output tax or unjustified use of the right to deduct input tax or a combination of these forms (Badžak, 2019).

It is more than visible that the possibility of circular fraud is present here as well. Only the "possibility of earning" is reduced due to the existence of input tax which is recorded at the customs crossing. Thus, the importer of the goods calculates the sales price and VAT to the customer immediately after its customs clearance. After payment of the purchase price and VAT, the seller disappears and does not settle his tax liability. This form of fraud can occur in every subsequent round of sales.

According to the Law on VAT in Bosnia and Herzegovina, it is paid:

- a) on the turnover of goods and services that the taxpayer, within the scope of performing his activities, performs on the territory of Bosnia and Herzegovina for a fee and
- b) on the import of goods into BiH.

Likewise, VAT is calculated in cases of the use of company property for private purposes, as well as the retention and use of goods after the termination of the company's existence, for which the input tax is fully or partially deducted.

From the above, it is more than evident that circular frauds with VAT can occur in Bosnia and Herzegovina:

- a) during importing the goods itself;
- b) during every transaction of goods in Bosnia and Herzegovina;
- c) using company property for personal purposes;
- d) use of the company's property upon the termination of the company's existence if the input tax is fully or partially deducted;
- e) when taxing services that come from outside and using the option of paying tax withholding, i.e. not paying it in the event that there is an agreement between the countries on the prohibition of double taxation.

It is quite certain that some of the listed forms (possibility) of avoiding the payment of VAT are included in the legal regime of general tax obligations, including obligations based on the Law on Income Tax, which are of an entity nature.

7. Means for combating carousel fraud

There are four means that tax authorities can use to prevent and combat carousel fraud. That are:

- a) Rapid Reaction Mechanism (RRM),
- b) Mechanism of Reverse Taxation (MRT)
- c) EUROFISC i
- d) VIES.

In addition to these listed activities, other different measures can be introduced at the national level that will monitor some of the listed risk factors in order to prevent carousel frauds. In particular, we will present some of the measures taken in Bosnia and Herzegovina to combat all forms of fraud in this sector. From the listed risk factors or so-called red flags three stand out:

- a) newly founded companies and
- b) the high value of individual transactions associated with them and
- c) the object of the transaction is some of the enumerated goods of small size and high value.

These criteria should be viewed cumulatively. As an individual measure, the monitoring of every recorded VAT obligation over a certain value could be taken into account.

7.1. Rapid Reactions Measures (RRM)

Council Directive 2013/42/EU20, which refers to the rapid reaction mechanism (RRM) to VAT fraud, stipulates that an EU member state may, due to urgency, designate a recipient as the person responsible for paying VAT for some supplies of goods and service (Buterin, et al. 2014). This is a special measure of the MBR to combat sudden and large-scale fraud that can lead to large and irreparable losses. If a member state wants to introduce a special measure of RRM, it must simultaneously send a notification to the Commission, but also to other member states. The notification submitted must contain all the information stating the disputed sector, the type and characteristics of the fraud, the existence of reasons for urgency, the suddenness and extent of the fraud, and the consequences that may cause significant and irreparable losses.

7.2. Mechanism of Reverse Taxation (MRT)

Council Directive 2013/43/EU19 amending Directive 2006/112/EC stipulates that member states may, until the end of 2018 and for a period of at least two years, stipulate that the VAT payer is a taxpayer to whom one of the following deliveries was made :

- a) delivery of mobile phones, i.e. devices made or adapted for use by an authorized network and operating on certain frequencies, regardless of whether they have any other purpose;
- b) deliveries of integrated circuit devices, such as microprocessors and central processing units in a state prior to integration into end-user products;
- c) supply of gas and electricity to a taxable reseller;
- d) delivery of gas and electricity certificates;
- e) delivery of telecommunication services;
- f) delivery of game consoles, tablet computers and portable computers;
- g) deliveries of cereals, industrial crops, including seeds and sugar beets, which are normally used in their unaltered state for final consumption;
- h) deliveries of raw and semi-finished metals, including precious metals, when they are not otherwise covered by a special provision for used goods, works of art, collectibles and antiques or a special provision for investment gold.

The enumerated goods belong to the circle of enumerated material and immaterial goods that could most often be the subject of abuse through carousel frauds. The main purpose of this mechanism is to shift the responsibility to the taxpayer to whom the goods or services are supplied. This avoids the possibility of avoiding the obligation to pay VAT on the part of the buyer of the goods.

7.3. EUROFISC

Eurofisc was established by EU Council Directive on administrative cooperation and prevention of fraud in the field of VAT no. 904/2010. It is a network that serves for the rapid exchange of targeted information among EU members. This is a decentralized network without the status of a legal entity that was established by EU members with the aim of promoting and facilitating multilateral and decentralized cooperation. It enables targeted and quick action, i.e. quick exchange of information. The member states themselves decide whether to participate in the work of Eurofisc and on the termination of participation. After agreeing to participate, the state must be active in the multilateral exchange of targeted information with other participating states. The information exchanged is confidential, and for member states the sources of information are equally available.

7.4. VIES

The VAT Information Exchange System (VIES) is an electronic means of transmitting information relating to VAT registration i.e., validity of VAT numbers of companies registered in the EU. EU law requires that, where goods or services are procured within the EU by a VAT taxpayer, VAT must be paid only in the member state where the purchaser resides, while in other cases, VAT must be paid in the member state where the supplier resides. For this reason, suppliers need an easy way to validate the VAT numbers presented by purchasers. This validation is performed through VIES. VIES does not itself maintain a VAT number database. Instead, it forwards the VAT number validation query to the database of the member state concerned and, upon reply, it transmits back to the inquirer the information provided by the member state. This information includes at least a "YES/NO" answer on the existence and validity of the supplied number. It may also include additional information, such as the holder's name and address, if this is provided by the member state. VIES optionally provides a unique reference number which can be used to prove to a tax authority that a particular VAT number was confirmed at time of purchase.

7.5. Measures taken in Bosnia and Herzegovina

Fraudulent behavior is an inevitable form of behavior in all human activities. It occurs especially in the sphere of business operations and finance. Perpetrators come from all social strata and, at the same time, do not choose the means to obtain illegally obtained material benefits. All perpetrators are aware of the possibility of strict sanctions, which does not deter them from illegal activities. Therefore, prevention and punishment measures have been developed and contained in a large number of legal regulations. Numerous authors mention various motives and methods of illegal activity, and so on... Tax and customs fraud is primarily based on fictitious companies registered on the basis of false identity documents (forged or stolen) that are used for trade, then disappear or "go bankrupt" when it comes time to pay taxes, then keep double-entry bookkeeping and they use other common means. Such schemes are often operated by organized networks that register businesses, open bank accounts and arrange contacts with owners of private or state-owned enterprises to sell or buy goods from them. In this chain, the key activity is the production of false documents and invoices (Šuškić, Tegeltija, 2007).

What is the goal of establishing this type of society? The ultimate goal is the unjustified realization of the right to a VAT refund, non-declaration or reduction of the declared import of high-tariff goods (especially tobacco, cigarettes and alcohol), and an increase in the declared export of goods that end up on the domestic market and most often on the black market outside of official financial flows. Easy acquisition of large sums of money is obviously a challenge for quite a few "entrepreneurs."

There are various measures that can be taken to combat fraudulent behavior in the field of VAT. Thus, ... in order to better and more effectively prevent "fictitious traffic", it is necessary perform adequate checks on future participants in the VAT system already at the time of submitting the request for registration of the VAT payer. If the measures to eliminate legally illegal, i.e. non-existent, inaccessible and parallel companies are not already implemented then, it will be all the more difficult to discover later, when dealing with VAT refund requests, that there was no turnover between the supplier and the recipient of the goods, i.e. that their business transaction "deems invalid" (Badžak, 2019).

Furthermore, special measures were directed towards the so-called fictitious societies. The Administration for Indirect Taxation has tightened the measures during the registration of such taxpayers in the VAT system, since checks of the correctness of these companies are carried out by visiting business premises, checking the number of employees, working conditions, conditions for performing certain types of activities, determining whether they have the capacity to the beginning of activities, and special emphasis is placed on foreign citizens. As for the registration courts, in the FBiH, when registering companies, they check whether the founders have a tax debt, and if there is, a valid registration cannot be made.

In addition to the above, the most important measure remains permanent controls, especially with importers and wholesalers. Controls at newly founded companies that have a minimum number of employees and realize large monetary and commodity transactions and which are usually sporadic. As an additional measure, the introduction of different types of registers on all grounds, exclusively in electronic form, is the only way to prevent illegal activities in a timely manner.

8. Conclusions

VAT is extremely important in the functioning of the single European market, which implies the freedom of movement of goods, capital and people. The implementation of taxation in different tax jurisdictions in commercial traffic within the EU shows that, due to various factors, the entire system is vulnerable and subject to numerous frauds. This includes existing models, approaches and solutions in the application of VAT at the EU level, and in the purchase and delivery of goods and services. The lack of a single legal basis in the EU, all according to the basic principle of the Lisbon Treaty on the free movement of goods in the EU, according to which the members have almost no border controls over the circulation of goods, leads to the possibility of tax evasion. At the same time, the cooperation of tax, police and judicial authorities at the level of individual member states and the EU is incomplete and ineffective.

Considering the financial scope of various forms of carousel fraud, the so-called the tax gap, which is an indicator of the level of effectiveness of implementation measures, as well as VAT harmonization measures within the EU. All available data show that much more needs to be done in addition to the listed basic measures. The members cannot afford to lose such large revenues and must step up their efforts and take all measures to collect public revenues.

To solve the problem of carousel fraud, it is necessary to use the experiences of successful countries and adapt them to domestic circumstances. First of all, it is necessary to establish a special body whose main activity will be the fight against carousel fraud, and that body should be within the tax administration. His only task should be the detection of this form of fraud and their quick detection. In addition to the listed measures, new ones should be found that would be directed in two directions. The first is the prevention of this form of fraud, and the second is their

stricter prosecution, whereby special attention should be paid to them within the criminal legislation.

Then it would be necessary to organize the education of civil servants, and all potential participants in this type of fraud, for the purpose of early detection of indicators of carousel fraud, because it has been shown that prevention is one of the most important prerequisites for their effective suppression. The good practice of certain countries in the EU is to send a letter to companies that are assumed to be involved in carousel fraud, warning them that they are under special surveillance due to the possibility of being involved in this type of fraud. This is a form of prevention, but also a warning that the state will react in an efficient manner in case of fraud.

Regarding B&H, we can say that there is a legal framework that enables the fight against fraud, and therefore circular fraud. The fight against all forms of fraud takes place institutionally. This is done primarily through the Directorate for Indirect Taxation, entity tax administrations, prosecutor's offices and courts. The regulatory level can be considered satisfactory, with the fact that it is necessary to continuously "monitor" all tendencies directed towards illegal and fraudulent activities. Regarding the circular frauds themselves, the B&H market is not so interesting because the zero rate of VAT is applicable in a smaller number of cases only when there are exceptions, that is, exemption from paying VAT. In all other cases, the execution of some form of circular fraud is possible.

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IMPACT OF ORGANIZATIONAL CULTURE ON EMPLOYEE'S PERFORMANCE - CASE STUDY: SMALL AND MEDIUM ENTREPRISES OF KOSOVO

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Abstract

Today's enterprises are predominantly dynamic that pose enormous opportunities and challenges for corporate practitioners and policy makers. Understanding such dynamism is very important to see the strategic objectives of the enterprise. Therefore, the main purpose of the research is to examine the impact of organizational culture on employee performance from the perspective of small and medium-sized enterprises operating in Kosovo. The methodology related to the literature review has been adopted as a methodology for an impact on the culture of small and medium enterprises, employees and systems. Based on findings, several dimensions of culture are considered by the analysis that the values and norms of an organization are based on the responsibilities of employees. And, by concluding, the paper argues that organizational culture influences employee performance in the dynamic, evolving context.

Keywords: impact, organization, culture, performance

JEL Classification: M10, M12, M14

NATURE AND IMPORTANCE OF JOB SATISFACTION

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Abstract

Recently there has been a resurgence of interest in the analysis of job satisfaction variables. Job satisfaction is correlated with labor market behavior such as productivity, quits and absenteeism. In this paper a general measure of job satisfaction is analysed in relation to several personal and job characteristics. The data used are from a survey conducted with 40 employees from different types of companies from the Pollog region in the Republic of North Macedonia. The connection between age, experience, gender and education with job satisfaction are considered as part of the paper.

Keywords: age, gender, sex, jobsatisfaction

Introduction

Locke (1976) defines job satisfaction as an individual's subjective valuation of different aspects of their job. According to Hoppock (1935) job satisfaction presents any combination of psychological, physiological, and environmental circumstances that causes a person truthfully to say, "I am satisfied with my job". Vroom (1982) defined job satisfaction as affective orientations on the part of individuals toward work roles which they are presently occupying. Gibson (2000) considers that job satisfaction may be defined as an individual's expression of personal well-being associated with doing the job assigned. Lawler (1973) sees job satisfaction as the difference between what an employee thinks he should receive for his effort and the perception of the actual outcomes.

Job satisfaction represents a combination of positive or negative feelings that workers have towards their work. Meanwhile, when a worker employed in a business organization, brings with it the needs, desires and experiences which determinates expectations that he has dismissed. Job satisfaction represents the extent to which expectations are and match the real awards. Job satisfaction is closely linked to that individual's behaviour in the work place (Davis et al., 1985).

Job satisfaction is a worker's sense of achievement and success on the job. It is generally perceived to be directly linked to productivity as well as to personal well-being. Job satisfaction implies doing a job one enjoys, doing it well and being rewarded for one's efforts. Job satisfaction further implies enthusiasm and happiness with one's work. Job satisfaction is the key ingredient that leads to recognition, income, promotion, and the achievement of other goals that lead to a feeling of fulfillment (Kaliski, 2007).

Job satisfaction can be defined also as the extent to which a worker is content with the rewards he or she gets out of his or her job, particularly in terms of intrinsic motivation (Statt, 2004).

The term job satisfaction refers to the attitudes and feelings people have about their work. Positive and favorable attitudes towards the job indicate job satisfaction. Negative and unfavorable attitudes towards the job indicate job dissatisfaction (Armstrong, 2006).

Job satisfaction is the collection of feeling and beliefs that people have about their current job. People's levels of degrees of job satisfaction can range from extreme satisfaction to extreme dissatisfaction. In addition to having attitudes about their jobs as a whole. People also can have attitudes about various aspects of their jobs such as the kind of work they do, their coworkers, supervisors or subordinates and their pay (George et al., 2008).

Job satisfaction is a complex and multifaceted concept which can mean different things to different people. Job satisfaction is usually linked with motivation, but the nature of this relationship is not clear. Satisfaction is not the same as motivation. Job satisfaction is more of an attitude, an internal state. It could, for example, be associated with a personal feeling of achievement, either quantitative or qualitative (Mullins, 2005). We consider that job satisfaction represents a feeling that appears as a result of the perception that the job enables the material and psychological needs (Aziri, 2008).

Luthans (2010, p.141) determines three main dimensions of job satisfaction: First, job satisfaction is an emotional response to a job situation. As such, it cannot be seen; it can only be inferred. Second, job satisfaction is often determined by how well outcomes meet or exceed expectations.

Third, job satisfaction represents several related attitudes. Besides this: Job satisfaction is related to a person's values, defined as "what a person consciously or unconsciously desires to obtain"; Different employees have different views of which values are important, so the same circumstances can produce different levels of job satisfaction. Job satisfaction is based on perception, not always on an objective and complete measurement of the situation (Noe *et al.*, 2001, p. 350).

On the other hand Jex and Britt (2014) determine three main approaches to analysing job satisfaction: the job characteristics approach, the social information processing approach and the dispositional approaches. According to the job characteristics approach, job satisfaction is determined primarily by the nature of employees' jobs or by the characteristics of the organizations in which they work. According to this view, employees cognitively evaluate their jobs and organizations and make some determination of their relative level of satisfaction (Jex & Britt, 2014, p.253). According to the Social information processing theory two main mechanisms that can result in job satisfaction or dissatisfaction can be differentiated: according to the first mechanism employees look at their behaviors retrospectively and form attitudes such as job satisfaction in order to make sense of it, while according to the second mechanism employees develop attitudes such as job satisfaction through processing information from the social environment (Jex & Britt, 2014, p.255). The basic premise of the dispositional approach to job satisfaction is that some employees have a tendency to be satisfied (or dissatisfied) with their jobs, regardless of the nature of the job or organization in which they work (Jex & Britt, 2014, p.257).

When considering job satisfaction, probably the most important point to bear in mind is that many factors that affect it. What makes workers happy with their jobs varies from worker to worker and from day to day. Apart from the factors previously mentioned, job satisfaction is influenced by the employee's personal characteristics, the manager's personal characteristics and management style, and the nature of the work itself. Managers who want to maintain high levels of satisfaction in the workforce must understand the needs of each member of the work force (Maxwell, 2007, p.447). Job satisfaction is the outcome of assessing job characteristics. If an individual is unable to develop his organizational identity by means of which to offer a particular definition about himself and his social relationships in that organization, it will make his task difficult to assess the characteristics of his job; hence, this may have negative effects on his job satisfaction (Sohrabiet al, 2012, p.30).

It is important to study the determinants of job satisfaction. Different aspects of job satisfaction are studied in the literature. These include the influence of education on job satisfaction (see Clark, 1996; Clark & Oswald, 1996), the influence of wage comparisons on job satisfaction (see Berkowitz & Fraser & Treasure & Cochran, 1987; Scholl & Cooper & McKenna,

1987; Ronen, 1986; Sweeney, McFarlin, 2005), the relationship between gender and job satisfaction (see Clark, 1997 ; Hulin & Smith , 1964; Bilgic,1998;Decker&Borgen,1993), the correlation between age and job satisfaction (Hunt and Saul, 1975).

Mullins (2011) introduces five groups of factors influencing job satisfaction, such as: Individual factors that include personality, education and qualifications, intelligence and abilities, age, marital status, orientation to work; Social factors that include relationships with co-workers, group working and norms, opportunities for interaction, informal organization; Cultural factors that include underlying attitudes, beliefs and values; Organizational factors that include nature and size, formal structure, HR policies and procedures, employee relations, nature of the work, technology and work organization, supervision and styles of leadership, management systems, working conditions and Environmental factors that include economic, social, technical and governmental influences (Mullins, 2011, p.196).

Satisfied employees tend to be absent less often, to be good organizational citizens, and to stay with the organization. Dissatisfied employees may be absent more often, may experience stress that disrupts co-workers, and may be continually looking for another job. Contrary to what a lot of managers believe, high levels of job satisfaction do not automatically lead to high levels of productivity (Ebert *et al*, 2020, p.188). A satisfied employee also tends to be absent less often, to make positive contributions, and to stay with the organization. In contrast, a dissatisfied employee may be absent more often, may experience stress that disrupts coworkers, and may be continually looking for another job (Griffin, 2016, p.270).

Maslow, Alderferand Herzberg all suggested that employees who are able to satisfy their needs at work would be more motivated and productive than dissatisfied employees. This idea appeals to common-sense assumptions about employee motivation. Surely a satisfied employee will also be a more motivated and productive worker? This is a wide spread assumption, but we must be extremely cautious about assuming such a simple relationship. Research evidence shows that there is often only a weak causal relationship between these three factors (Forster, 2005, p. 170). The dissatisfaction-satisfaction continuum contains a zero midpoint at which both dissatisfaction and satisfaction are absent. An employee stuck on this midpoint, although not dissatisfied with pay and working conditions, is not particularly motivated to work hard because the job itself lacks challenge. Herzberg believes that the most managers can hope for when attempting to motivate employees with pay, status, working conditions, and other contextual factors is to reach the zero midpoint. But the elimination of dissatisfaction is not the same as truly motivating an employee. To satisfy and motivate employees, an additional element is required: meaningful, interesting, and challenging work (Kreitner, 2009, 339).

A study by Camdron (2005) resulted in the conclusion that: factors with which people are not satisfied, motivate more continuously (e.g. material conditions); factors with which people are not satisfied, do not motivate significantly (e.g. career), and factors with which people are satisfied, but motivation there is continually high (e.g. relationships with superiors and responsibility). Such studies prove that not all factors have the same influence on job satisfaction and motivation as well. Job satisfaction has to do with the feelings that the worker develops in relation to the different dimensions of the work, while motivation has to do with the extent to which the worker is interested and motivated to give extra effort towards the realization of company objectives. Despite the obvious differences, to some extent the conclusion holds that, if the employee has a positive attitude towards the work he does, then the chances that he will give more effort for its realization are greater.

Descriptive statistics

A data set consisted of forty employees from the Pollog region in the Republic of North Macedonia is used to determine the impact of several factors on employee job satisfaction. Since no official data could be obtained from the state statistical office, nor from other relevant

institutions in the country, a field research was conducted by delivering a paper-pen type of questionnaire to employees. In order to provide data regarding the general level of job satisfaction among these employees, as part of the questionnaire they were asked to provide a clear answer to the question “How satisfied are you with your job in general?”. The individual responses to the question are “Not at all”, “Somewhat satisfied”, “Satisfied”, “Very satisfied”. The individual responses were registered as a four ordered measure with values from one to four, with 1 being “Not at all” and 4 being “Very satisfied”.

A cross tabulation of the four job satisfaction measures is presented in table 1. As can be noticed most respondents are satisfied with their job in general. Almost two thirds of the total number of respondents are very satisfied with their job in general and an additional 18% are satisfied. Only 5% of the total number of respondents are not satisfied with their job at all

Table 1. Weighted distribution sample of job satisfaction

Level	Number of individuals	Percentage
Not satisfied at all	2	5.26
Somewhat satisfied	5	13.16
Satisfied	7	18.42
Very satisfied	24	63.16
Total	38	100

Source. Authors own calculations

Aside from job satisfaction several factors of job satisfaction have been included in the research. In fact, based on previous relevant research age, sex, work experience, level of education, perception on the nature of one's job, perception on one's salary and perception on advancement opportunities, have been included in the research as determinants of job satisfaction. Weighted summaries of statistics on all of these variables is presented in the following table 2.

Table 2. Weighted distribution sample of job satisfaction determinants

Level	Number of individuals	Percentage
Age		
18-23	5	12.50
24-29	16	40.0
30-35	7	17.50
36-40	6	15.0
Over 40	6	15.0
Sex		
Male	24	59.0
Female	16	41.0
Level of education		
Primary school	0	0
Secondary schools	5	12.50
Bachelor's	17	42.50
Master	12	30.0
PhD	6	15.0
Work experience within company		
1-2 years	6	15.79
2-4 years	9	23.68
4-10 years	13	34.21
10-20 years	8	21.05
Over 20 years	2	5.26

Perception of job nature		
Boring	0	0
Creative	5	13.16
Difficult	3	7.89
Challenging	14	36.84
Nice	16	42.11
Perceptions on own salary		
Enough to satisfy daily needs	2	5.26
Regular	14	36.84
Not guaranteed	1	2.63
Less than what I deserve	8	21.5
High	13	34.21
Perception of advancement opportunities		
High	19	50
Limited	4	10.53
Merit based	9	23.68
No chances for me	1	2.63
Unjust	5	13.16
Source. Authors own calculations		

The main descriptive statistics data are presented in table e.

Table 3. Descriptive statistics			
Variable	Observations	Mean	Standard deviation
Age	40	.475	.5057363
Sex	40	.525	.5057363
Level of edu.	40	.575	.5006406
Work exper.	40	.55	.5038315
Jobsatisfact.	40	.325	.4743416
Nature of job	40	.825	.3848076
Salary	40	.925	.2667468
Advancement	40	.775	.4229021
Source. Authors own calculations			

Econometric model

According to Blanch flowr and Oswald as cited by Fetai et al (2011), the econometric model of job satisfaction is as follows:

$$JS_i = A + B_i Z_i + \varepsilon_i$$

According to this model, Job satisfaction (JS) is reported as well be in gof individual i for a specific ammount of time t. Vector Z according to the model represents the determinants of job satisfaction, in th is caseage, sex, work experience, level of education, perception on the nature of one's job, perception on one's salary and perception on advance ment opportunities. E is a schihastic component.

Sinc eaccording to the research job satisfaction it selfis included as a component measured with descriptionsr an ging from one to four, the above mentioned equation can be analysed as a orderedprobit model. Thus:

$$P(JS_i = J - 1) = \varphi(\lambda_{j-1} - A - BZ_i) - \varphi(\lambda_j - A - BZ_i)$$

In this equation, J takes a value from one to four, λ is defined as $JS = J - 1$ when $\lambda_{j-1} < JS \leq \lambda_j$ and $\varphi(\cdot)$ is the cumulative normal distribution.

Econometric results

The effects of the individual determinants on job satisfaction are analysed. Table 4 contains the data of the ordered probit model estimation with the coefficient, standard deviation, z-statistics,

Variable	Coeff.	Standard dev.	Z	P>(z)	95% conf. interval
Age	.4055194	.4518102	0.90	0.369	-.4800123 1.291051
Sex	.4067565	.439329	0.93	0.355	-.4543125 1.267825
Level of edu.	.5077386	.4458275	1.14	0.255	-.3660673 1.381545
Work exper.	-.0340542	.4818234	-0.07	0.944	-.9784106 .9103022
Jobsatisfact.	-.5945872	.6026116	-0.99	0.324	-1.775684 .5865097
Nature of job	-.6749608	.8752985	-0.77	0.441	-2.390514 1.040593
Salary	.2983202	.5632057	0.53	0.596	-.8055428 1.402183
Advancement	-.1939828	.5088426	-0.38	0.703	-1.191296 .8033305

Source. Authors own calculations

In table 5 we report the results of marginal effect of column 1 of table 4 which represents the probability of changes in the dependent variables of being totally dissatisfied, somewhat satisfied, satisfied and very satisfied.

Variable	Coeff.	Standard dev.	Z	P>(z)	95% conf. interval	x
Age	.160219	.17599	0.91	0.363	-.184724 .505162	.525
Sex	.1604228	.17044	0.94	0.347	-.17363 .494475	.575
Level of edu.	.1995869	.171	1.17	0.243	-.135576 .53475	.55
Work exper.	-.0135499	.19162	-0.07	0.944	-.389119 .362019	.325
Jobsatisfact.	-.2319264	.22266	-1.04	0.298	-.668326 .204473	.825
Nature of job	-.2581113	.30255	-0.85	0.394	-.851094 .334871	.925
Salary	.1172908	.21711	0.54	0.589	-.308241 .542822	.775
Advancement	-.077255	.2022	-0.38	0.702	-.47356 .31905	.75

Source. Authors own calculations

As can be noted from the data presented in the tables above, the younger respondent have a higher level of general job satisfaction compared to the older generation, with younger generations be in around 16% more satisfied compared to older generations. Sex also has a direct impact on job satisfaction, with male respondent is being around 16% more satisfied compared to female respondents. Education also has a positive correlation with job satisfaction, having in many that respondents with higher level of education (masters and PhD) are by 19% more satisfied compared

to the respondent is with lower level of education. Work experience perception on one's job and salary have not proven to be significant factors influencing job satisfaction.

Concluding remarks

Job satisfaction is a complex topic to research, especially having in mind that much can be added to the issue. Managerial job satisfaction, the relations between employee job satisfaction and managerial job satisfaction, and even the correlation between one's job satisfaction and overall company satisfaction may be a good start in point for future research of the matter. The paper has strived to provide readers with a basic understanding of an overly broad topic, such as employee job satisfaction and has set up the stage for future deeper research on this topic, research that might even prove some of the classics of job satisfaction wrong. The world around us is changing, and these changes will impose the need to adjust the existing main models of job satisfaction, by adding more elements to the equation, especially in the part of the main factors influencing job satisfaction.

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OPTIMIZATION OF EFFECTS OF THE STATE AUDIT INSTITUTION IN CORPORATE FINANCIAL AND NON-FINANCIAL REPORTING AND REFORMING OF PUBLIC ENTERPRISES: EVIDENCE FROM THE REPUBLIC OF SERBIA

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Abstract:

Effective implementation of strong corporate governance combined with credibility of managers and auditors emerges as a key factor of enhancing trust between companies and stakeholders leading to economic recovery. This multipronged strategic development integrating transparent financial and non-financial reporting introduces stability into a financial system. Its systemic risk permeating the analyzed reports of the State Audit Institution (SAI) is hence effectively reduced. The global financial crises of 2008 and 2022 have national, regional and global impacts revealing that fundamental financial system stability potential lies in trust between companies and financial institutions. Companies planning sustainable long-term development can secure additional sources of financing by strengthening investor confidence and business reputation with rule of law, through strong regulatory, financially transparent and efficiently organized institutions. Hence, authors suggest holistic corporate reporting with continuous process improvement of financial and non-financial management standards and transparency in the financial markets with a strengthened SAI role. Applied are statistical and modeling methods to analyze regulatory reform principles of corporate disclosure of information to improve business performance of public enterprises and to strengthen investment confidence in the SAI. Specifically, evaluated are the SAI 2019-2021 data sources in relation to regularity and errors in financial reports, consistency of internal controls and internal audit of audited public sector entities and their social responsibility. The key roles of financial management, the control system and internal audit have been identified, both for overcoming the problems of efficient, effective and economical operation of the public sector, and for establishing good and sustainable corporate governance, with ensuing professionalization of personnel at all levels of management, control and audit. Clearly, laws and by-laws, principles and models are a starting point. In order to provide value added to investors, to stimulate initial public offering, issuance and trading of shares companies should essentially improve corporate disclosure of financial and non-financial information. This emerges as an unbroken process of modernizing corporate governance practice and reporting furthered by a clear and effective SAI role. After an overview of public sector financial management, the World Bank Governance and Transparency Index (GTI) and role of the SAI are analyzed. Financial and non-financial irregularities are diagnosed in light of announced corporatization of public enterprises. Finally, authors develop a systematic presentation of their own models of corporate financial review process and an expanded SAI index for analytical governance monitoring with broader practical and sector implications.

Key words: corporate governance, GTI, public enterprises, reporting, SAI.

JEL classification: D23, G28, G34, G38, H83, L25, M41, M42, M48.

THE FACTORS INFLUENCING THE UNIVERSITY PREFERENCE: A STUDY ON THE FACULTY OF COMMUNICATION IN TURKEY

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Abstract

In recent years, the inclusion of foundation / private universities in the Turkish Higher Education System has taken the sector into a competitive environment. While the universities are trying to reveal their differences in order to get student enrollment on the one hand, and the students exert effort to make a choice / preference among universities on the other. The characteristics of the university that lives up to the expectations of the students are the factors that affect their university preference. This article aims to discuss and determine the factors that influence the students' preference of university. In this framework, semi-structured questionnaires were sent to the first year students of the communication faculty and the data collected from 109 students were transferred to the tables using the SPSS 22.00 package program and the evaluations made in percentage were discussed and analyzed extensively.

From the inquiries made, it has been demonstrated that the most effective factors in the choice/preference of students are tuition fees, supported education scholarship, opportunities that university offers, quality of education, academic staff, recognition of the university and recommendations. It has been concluded that the effective factor in the choice of program is professional expectation at a rate that can be said to be approximately 100%. Students choose the university that meet their expectations (supported education scholarship, tuition fees) and includes the department/ program they prefer.

Keywords: Turkey, Faculty of Communication, Choice of University, Factors Influencing the Preference

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1. Introduction

In the recent years, the free market system, which has emerged as a result of associating neoliberal policies with globalization, has reflected in the nation states from their economy to education, health and other sectors. This development, in particular, has led to the participation of private/foundation universities in the Turkish Higher Education System, along with state universities, to the spread of both university types to Anatolia by increasing in number, and to a significant change in the education system in general. This change, which has shaken the Turkish Education System, has moved the sector to a competitive environment that operates according to the rules of free market economy. This development, which is also considered as the democratization of the higher education system (Akalin, 2002; Alper, 1994), gives the students in the university selection process the opportunity to choose the university that lives up to their expectations by comparing universities in terms of their characteristics while giving the universities the reflex to create motivation in developing their education policy and strategies, living up to the student expectations, demonstrating their differences from each other (Shah, 2010) and raising quality standards. Students need to know the characteristics of universities while making their choices, that is to say, while choosing a university; universities also need to know the criteria used by students in university selection more than ever.

There are many studies in the literature, which are conducted by different researchers in different fields of science and different disciplines in different countries, regarding the criteria used by students in choosing a university. However, this research is to different from the previous studies, by choosing the communication faculty students, which is a different group, as the observation group, and by processing the data collected from the observation group with a semi-structured measurement tool, specific to foundation/private universities.

The factors that motivate students to choose a university are the characteristics of the university. This research aims to determine and discuss the factors that influence the decision-making processes of communication faculty students in Turkey while choosing the university and department.

In the study, which has been confined to first-year students of the Faculty of Communication of a foundation/private university, after the research findings in the literature are discussed about determination of the factors that create motivation in the university/program preference of the students or the features that make up the quality of the university they will choose. In the following section, the method and purpose of the research are explained; in the section four, the findings are presented and in the last section, these findings are discussed based on the literature. The study is finalized with the references used in the research by giving the results obtained from the analyses, comments and discussions.

2. Literature Review

2.1. Factors Influencing University Preference

Every student who has reached to the completion stage of his/her high school education in Turkey, as in the world, comes to the stage of deciding about going or not going to university or in which field s/he wants to study if s/he decides to go. In other words, it boils down to the preference of a profession that s/he wants or plans to specialize in line with his/her own goals. At this stage, students begin to do intensive research about the universities/faculties and programs they want to

study. During the research process, the factors that were determined to be effective in the process of deciding on the university/faculty and the program that live up to expectations of the students and the one to enroll in are generally divided into five groups in the literature.

However, before moving on to the criteria/factors, it is useful to talk about the socio-cultural capital formed as a result of the interaction of the cultural and ecological environment, which affects the process leading to the university/program preference of the student, moreover, which serves as a determining factor, plays a role as a background factor and forms the living conditions.

2.2. Socio-Cultural Capital

As in every democratic society, every student has an equal chance to enter higher education in Turkey, too. However, the schools where students receive education starting from primary education and the social and cultural environment in which they live differ from one to the other. In other words, the fact that students receive education in high schools of different types and qualities, that the children of families, who have better economic status, get higher education degree and are coming from a better cultural background, and who consider investment in education important, create a significant socio-cultural difference among students. This difference is also reflected in the scores that the students have achieved in the University Selection and Placement exams. The scores achieved in these exams reveal the difference between those with high socio-cultural capital and those with low /poor socio-cultural capital. Moreover, it determines the university options that students will choose among. Thus, the socio-cultural capital difference that students have acquired as a result of the interaction of their birthright and the cultural and ecological environment in which they live plays an important role in choosing university as the source of inequality (Manoku, 2015, pp. 253; Perna, 2006). While students with high cultural capital prefer high quality universities and programs (Kim & Gasman, 2011; Maringe, 2006; Pampaloni, 2010; Teranishi, Ceja, Antonio, Allen, & McDonough, 2004; Tierney, 1983), students with poor socio-cultural capital are more inclined to prefer the universities of less quality. There is important evidence in the literature that they tend to prefer universities with less quality (Mangan, Hughes, Davies, & Slack, 2010, pp. 337). Undoubtedly, students develop sensitivity about preferences through the socio-cultural capital they gain from the cultural and ecological environment they live in, set different goals, and are motivated to different levels of the hierarchy in Maslow's motivation theory taxonomy (Kenrick, Griskevicius, Neuberg & Schaller, 2010).

2.3. Motivation Theory

Maslow has developed the theory of motivation, a.k.a. the hierarchy of needs in the literature, which has influenced and continues to influence many fields of science under the influence of the psychologists such as Sigmund Freud, Alfred Adler, Carl Gustav Jung, Kurt Levin, and the studies in the fields of psychology, biology and anthropology (1943). According to the theory, human needs form a pyramid, which is organized as security, love and belonging, respect (freedom, recognition, etc.), self-actualization, starting from physiological needs with a relative superiority (Kenrick, Griskevicius, Neuberg, & Schaller, 2010; McLeod, 2018, pp. 1).

Continuing and renewing his studies on these needs, which he organized in five categories, Maslow also stated that there was no sequential rigidity in the satisfaction of needs, that is, the

satisfaction of one does not follow the other, that there may be interindividual differences according to individual differences and environmental conditions, and as a result of these differences, more than one need can be addressed all at once (Kenrick, et.al., 2010). He expanded the first four levels of his taxonomy (physiological needs, safety, love, and belonging) by defining three levels as deficiency needs, and the top of the hierarchy, which he previously called self-actualization, as growth needs (cognitive needs, aesthetics, self-actualization, and self-transcendence) (McLeod , 2018).

Maslow states that for the satisfaction of the deficiency needs, which constitute the first four stages of the bottom-up sequential order of the pyramid, the satisfaction of one will create motivation for the other, that people who come to a certain adulthood level or age group will set a set of goals for their lives cognitively and that they will be motivated to achieve these goals. Kenrick, et.al., 2010). Undoubtedly, there are factors that affect people's ability to set goals stemming from their growth needs and to develop sensitivity and motivation to achieve these goals. These factors include the cultural and ecological environment that ensures that the individual, who has reached a certain cognitive level, makes sense of the world, questions his/her point of view and the events, makes predictions about the future, makes a career choice that suits her/him, is effective on self-development, and includes many different variables. As a result of the interaction of these factors as independent variables, they individualize the individual on the path to self-realization and lead him/her to be motivated for different goals.

As a result, the socio-cultural capital, which is formed as a result of the interaction of the individual's innate births with the culture and ecological environment in which s/he lives, as independent variables, creates motivation for different goals with his growth need, and makes preferences that are suits him/her, including profession, that s/he plans for his/her later life. In other words, the motivation created by the said socio-cultural capital is effective in choosing a university/program with different characteristics (Paulsen, 1990).

Thus, the knowledge, skills and competencies that the student has acquired starting from primary school to the end of high school education determine the university, faculty and program with which features s/he will choose, in other words, the quality of the university that includes the factors desired by the students and determines their options.

Regardless of whether the students have a strong or poor socio-cultural capital, the factors that are effective in the decision process or the features they look for in the university they want to study at when choosing among the options available to them are stated as follows in the literature: The quality of the university, the quality of the academic staff, the opportunities that the university offers, referrals and the fee paid to the university.

2.4. Preference Factors

2.4.1. Quality of the University

Above all, a high-quality/prestigious university is an important factor in preference (Kim & Gasman, 2011; Maringe, 2006; Pampaloni, 2010; Teranishi et al., 2004; Tierney, 1983), while the intended faculty and the quality of the program is also considered as an important factor in

preference as much as the university itself (Clinton, 1990; Hoyt & Brown, 2003; Maringe, 2006; Richards & Holland, 1965).

There is evidence in the literature that the fact that the medium of instruction is (mostly) in English in Turkey is influential for the students to choose that university and create added value in terms of reputation (Çokgezer, 2014). The fact that the university offers education in a different language is effective especially in the university preference decision process of students with a college education background.

In addition, the fact that the university, which has an impact on the decision process when the students are making their university and program preference, has a high or low level of quality/reputation, is a case related to the fact that its graduates have the qualifications sought in the relevant sector in terms of professional standards and are accepted. It is the teaching staff of the universities as well as the management staff that provides its graduates with the qualifications and skills demanded by the industry, and that provides the working environment needed by the students and faculty members.. In other words, it is the reflection of the university administration's understanding of caring for quality and the importance it attaches to the environment. Consequently, what brings the quality is the academic staff of the university, which is constituted by the administrative structure and the faculty members.

2.4.2. Academic Staff

The quality/reputation of the university is also related to the recognition of that university (Coşar, 2016). One of the most important missionaries that ensure the recognition of a university is the fixed (that is to say, the case that the staff does not change constantly) faculty members of that university. Such a policy is also very important in terms of corporate culture. What ensures the recognition of faculty members and increase their credibility are their contributions to science. Secondly, it is their graduates who create significant added value in the sector. In the university preference decision process, students investigate the status of universities firstly based on whether their graduates are accepted in the industry or not, and then their other characteristics by using the new media and the social media tools it provides service (Moody, 2020, pp. 64). This is because the qualifications of the faculty members are transferred to the students, these transferred qualities are revealed in the goods and services produced by the graduates in their working areas.

2.4.3. Quality of Education

The qualifications of the academic staff are the main determinants of the qualifications of education. This is because the quality of education is the result of the contribution made by each academic staff, from the administrators at every level of the hierarchy to the academicians who give training and education. This quality is among the factors that influence the university preference of the students.

2.4.4. References

References such as family members, friend groups, teachers, graduates are among the factors that influence the university preferences of the students (Kazi & Akhlaq, pp. 193). This is because

students consult with their families and friend groups in their immediate surroundings about whether the university provides job opportunities to its graduates, what the job opportunities for the graduates are offered in the sector, the recognition of the university, the quality of education, international connections during the university selection decision process, while continuing their quests, (Kusumawati, Yanamandram, & Perera, 2010). The advice of the people consulted plays an important role in the preferences of the students, that is, becomes effective.

2.4.5. Campus Facilities and Location

The fact that the place where the university is located is a metropolitan city is among the factors that have a significant impact on students' preference of university (Cokgezer, 2014). Ease of transportation and proximity to home are also considered as other important factors for the university preference.

Campus facilities are considered important by students (Moody, 2020, pp. 92). Presence of a rich library, environments that provide services where they can meet their food and beverage needs, presence of indoor and outdoor social environments where they can relax and interact with their group friends, presence of conference halls where events are held, and in addition, the university being a campus university are the features that students are seeking while choosing a university today.

2.4.6. Tuition Fee (Expectations)

The tuition fees that students have to pay in Turkey differ between state and foundation/private universities. Fees paid at state universities as tuition fee vary (usually low) depending on the faculty and program preferences and are usually low.

In foundation/private universities, the concerned fees are paid as tuition fees. These fees paid as tuition fees vary depending on the reputation (quality) of the university in the society, the faculty, the program and the different language of instruction. Moreover, people believe that the higher the quality, the higher the price (Shah & Oppenheimer, 2008). These fees become effective on students' university and department/program preference (Cokgezer, 2014).

Heller (1997) states that low-income students are more sensitive to tuition fees than high-income students. Inevitably, it is natural that there is a positive relationship between the income of the student and this sensitivity. Some researchers, on the other hand, state that there is no positive relationship between tuition fee and school choice, in other words, it is not effective (Heller, 1997; Leslie, & Brinkman, 1988; Long, 2004; McDuff, 2007).

The fact that the university is close to home is, in fact, an important economic gain. If the student has such an opportunity, s/he will not only save on paying the dormitory fee, but also will get accessibility and thus, an economic gain in terms of transportation expenses. Therefore, closeness to home (Dawes & Brown, 2005) or accessibility by using a single vehicle has a significant impact on the student's choice of university. Especially in big cities, closeness to home and accessibility are much more effective on the university preference (Yamamoto, 2006). There are research findings that, in addition to the accessibility, the financial aid opportunities (scholarships) are effective in the student's choice of university (Agrey, & Lampadan, 2014; Foskett, Roberts, & marriage, 2006; Hoyt, & Brown, 2003). All these factors are the factors that

affect the cost of education. In that case, education expenses can be said to be a priority issue in terms of student preference.

Consequently, different findings are put forward in the literature with regard to the factors that are effective in the student's university, faculty and program selection/preference process, and the way the researchers formulate and solve the problem (Aydın, 2015). However, the above-mentioned factors that have been addressed individually in university/faculty and program preference are the factors that ultimately constitute the quality of the university. In other words, the quality of the university is also a determinant of other factors.

Students find out whether the university they will prefer has the features they are looking for by visiting the web pages offered by the universities in the virtual environment (Hoyt & Brown, 2003) and using social media intensively, apart from the advices received from certain people. In other words, each student takes a long look at which university is suitable for the criteria that comply with the goals they set at the time of choosing a university. Consequently, based on his/her sensitivity to certain factors, the student chooses or prefers a scholarship-supported the university with the features that meet his/her expectations.

3. Objective and Method

This research, which has been organized to determine the factors that have an effect on the university and department/program preference decision-making processes of communication faculty students in Turkey, and to discuss the subject, is a quantitative study, in other words an experimental study, since the analyzes are made through the data obtained from the participant students. However, in order to interpret and discuss the findings that are put into tables with statistical analyses, and to conduct and test the research on a theoretical basis, a literature review on the field has been made. Therefore, a second method used in the research is the qualitative method based on the interpretative paradigm.

3.1. Objective

The socio-cultural capital that the students, who are in the transition stage to university in Turkey, have in their academic career preferences as a result of the interaction of the variables in the cultural and ecological environment in which they live is effective in determining their future goals and in their being sensitive to some factors. As a result of this effect, it is inevitable for students to show sensitivity to and be motivated by the factors that play a role in their university and department/program preference. Based on this fact, the research findings are analyzed and discussed in depth in relation to the data in the literature. These discussions are conducted to test the following assumptions.

Firstly, it is tested whether there is a relationship between the findings and results of the studies carried out on the factors influencing the university preferences of the students in the literature, and the factors that are stated by the students who have preferred the Faculty of Communication and been enrolled in the departments/programs in Turkey to be effective in their preferences.

Secondly, considering the studies conducted in the literature, it has been found that the analyses on the subject have been made on the data collected with the option preference given in

the structured questionnaires. This research tests and discusses the subject, using the theoretical approaches in the literature with a different methodological approach in a different group and analyzing the data obtained from the answers of the participants have given to open-ended questions via a semi-structured questionnaire form.

As a result, this article is to identify, analyze and discuss in depth the factors that have an effect on the university and department preference decision-making processes of foundation/private communication faculty students in Turkey.

3.2. Method

3.2.1. Research Model

In this study, our research model is descriptive since the statistical analysis of the numerical data obtained by quantitative methods has been made, these numerical data have been interpreted and discussed in the light of the information in the theory through the use of qualitative methods, and the factors that are effective in the university/department/program preference of the students have been determined by establishing relations between the variables.

3.2.2. Universe and Sample

The universe of the study was determined as first year students of foundation/private universities. The study was carried out with the participation of all 109 students studying in the first year of a foundation university in the 2020-2021 academic year. The observation group is limited to 109 people and sampling of at least 50 people was considered sufficient to process the data collected with open-ended questions (Kozak, 2018, pp. 103).

3.2.3. Data Collection Tool (Questionnaire)

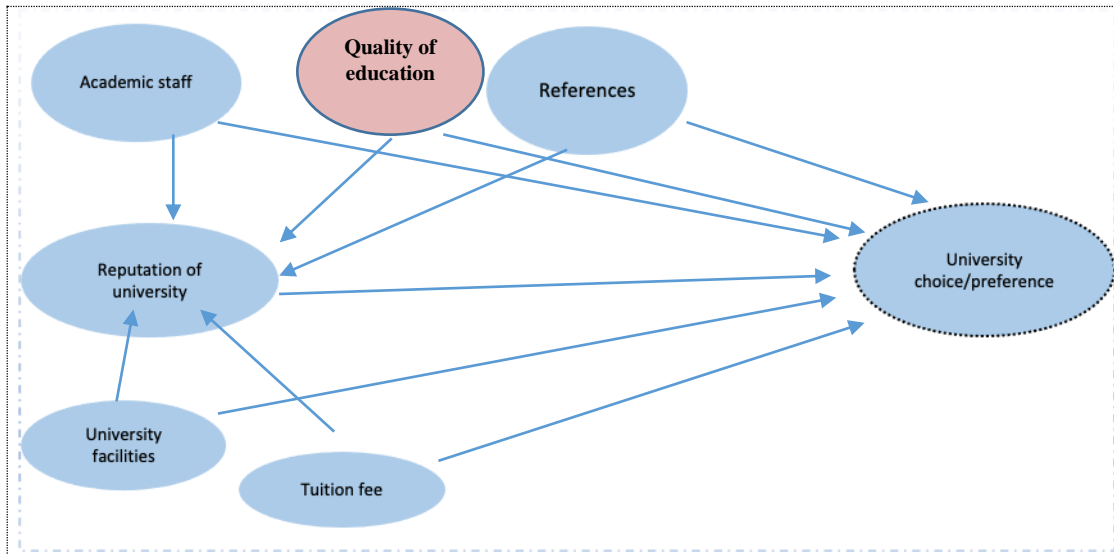
A semi-structured data collection tool (questionnaire) was used in the research. The tool developed by the researcher herself consists of two parts. The first part contains closed-ended questions about the social-personal characteristics of the student (such as gender, high school from which s/he graduated, education background of the mother and father, whether s/he works and the income level of the family), while the second part contains the open-ended questions that prompted the student to write the factors influencing his/her university and department preference, starting from the most important one in order of priorities. As the last question, a question about whether they are satisfied with the choice was included. Answering the questions and sending the questionnaire was carried out on a completely voluntary basis, and permission was obtained from the relevant institution for the implementation of the questionnaire. The study was carried out by obtaining a report from the Ethics Committee of Istanbul Gelişim University.

3.2.4. Process

The questionnaires returned from the students were numbered, the answers regarding the preference given in each questionnaire were grouped according to the order of preference, and the

preferences in each group were written one under the other. Considering the sub-breakdowns according to the answers given by the students, as can be seen in Figure 1, the possible relations of these groups with each other were evaluated and divided into six groups.

Figure 1. Relationships between university choice and other factors



Source: Author’s illustration

Department preferences were also grouped in the same way as university preferences, as can be seen in Table 4, as four factors including three preferences.

SPSS 22.00 package program was used for the analysis of the data obtained from the participants. The evaluation of the relationship between the social-personal characteristics and the features of university, which the students stated to have an effect on the choice of university/faculty and program, was carried out over percentage values. The data obtained were transferred to the table as numbers and percentages. Considering the small number and homogeneity of the students in the sampling group, tests regarding the level of significance were not conducted.

4. Findings

4.1. Social-Personal Features of Students

Table 1. Distribution of Students by Social-Personal Features

Values		Number	%
Demographic features			
Gender	Female	65	59.6
	Male	44	40.4
Alma Mater	Anatolian high-school	45	41.3
	Science high-school	1	0.9
	Regular high-school	13	11.9
	Imam-Hatip high-school	5	4.6
	Vocational high-school	45	41.3

The prepared measurement tool was sent to 109 first-year students of a university's communication faculty via e-mail, and 100% feedback was received from 109 students. In terms of personal features, as seen in Table 1, 65 people who make up 59.6% of the participants are females, and 44 people who make up 44.4% are males. According to the type of alma mater, 45 people (41.3%) are Anatolian high-school graduates, 1 person (0.9%) is science high-school graduate, 13 people (11.9%) are regular high-school graduates, 5 people (4.6%) is Imam-Hatip high-school graduates, 45 people (41.3%) are vocational high-school graduates. The majority consists of the students who graduated from Anatolian High School and Vocational high-school at the equipondious rate of 82.6% in total.

4.2. Socio-cultural-Economic Features of Student Families

As can be understood from the examination of Table 2, with regard to the education levels of the mothers of the participants, 34 people (31.2%) are primary school graduates, 24 people (22.0%) are secondary school graduates, 35 people (32.1%) are regular high school graduates, 13 people (11.9%) are college graduates, 3 people (2.8%) are university graduates. With regard to the education level of their fathers, 19 people (17.4%) are primary school graduates, 22 people (20.2%) are secondary school graduates, 47 people (43.1%) are regular high school graduates, 16 people (14.7%) are college graduates, 4 people (3.7%) are university graduates. Of the mothers, 33 (30.3%) of them are employed, with 7 (6.4%) in the public sector and 26 (23.9%) in the private sector, whereas, the majority (67 (69.7%) of them) is unemployed. As for their fathers, 96 (88.1%) of them are employed, with 12 (11.0%) in the public sector and 84 (77.1%) in the private sector, whereas 13 (11.9%) are unemployed. With regard to the economic situation, 15 people (13.8%) are consisted of families with an income level of TRY 2000-2500 (\$240-300), 16 people (14.7%) with an income level of TRY 2600-3000 (\$312-360), 31 people (28.4%) with an income level of TRY 3100-4000 (\$372-480), 17 people (15.6%) with an income level of TRY 4100-5000 (\$492-600), 30 people (27.5%) with an income level of more than try 5000 (\$600).

Table 2. Socio-cultural-Economic Features of Student Families

	Values	Number	%
Demographic Features			
Education Level of Mother	Primary School	34	31,2
	Secondary School	24	22,0
	High school	35	32,1
	College	3	2,8
	University	13	11,9
Education Level of Father	Primary School	19	17,4
	Secondary School	22	20,2
	High School	47	43,1
	College	4	3,7
	University	16	14,7
Job of Mother	Public	7	6,4
	Private	26	23,9
	Unemployed	76	69,7
Job of Father	Public	12	11,0
	Private	84	77,1

	Unemployed	13	11,9
Income Status	2000-2500 (\$240-300)	15	13,8
	2600-3000 (\$312-360)	16	14,7
	3100-4000 (\$372-480)	31	28,4
	4100-5000 (\$492-600)	17	15,6
	More than 5000 (\$600)	30	27,5

In general, the students have contented themselves to write three reasons for this question, which was formulated as an open-ended question in the measurement tool as "write the factors that influence your university preference in order of priorities, starting with the most important one", and prompted to write five reasons. For this reason, our statistical processes and evaluations were made based on three preference reasons, as can be seen in

Table 3. Factors Influencing University Preferences of Students

Reasons for preference		Values	Number	%
Reason no. 1 for the preferring university	Academic Staff		10	9,2
	Quality of Education		28	25,7
	Referrals		11	10,1
	Reputation (Quality) of University		9	8,3
	Campus facilities		14	12,8
	Tuition Fee (Student expectation)		37	33,9
Reason no. 2 for the preferring university	Academic Staff		13	12,5
	Quality of Education		15	14,4
	Referrals		11	10,6
	Reputation (Quality) of University		9	8,7
	Campus facilities		20	19,2
	Tuition Fee (Student expectation)		36	34,6
Reason no.3 for the preferring university	Academic Staff		5	5,5
	Quality of Education		13	14,3
	Referrals		7	7,7
	Reputation (Quality) of University		7	7,7
	Campus facilities		20	22,0
	Tuition Fee (Student expectation)		39	42,9

As can be understood from the examination of Table 3, the factor coded as student expectation (tuition fee), the sub-breakdowns of which also include the scholarships and the closeness of the university to home, is primarily the leading factor that has a relative advantage in university preferences of the students both in number and as percentile. It is noteworthy that it is the first effective factor in all three preferences stated as the reason for preference. In preference, the quality of the education provided ranks second among the first reasons, while the university facilities, which are included in the group given among the second and third reasons, rank second.

While the quality of education ranks second among the reasons for first preference, the same factor ranks third among the reasons for second and third preference. The University facilities, which are among the first preference reasons, are in the third place.

In general, the students contented themselves to write three reasons for this question, which was formulated as a second open-ended question in the measurement tool as "write the factors that influence your program preference in order of priorities, starting with the most important one" and prompted to write five reasons.

Table 4. Factors Influencing the Program Preferences of the Students

Values		Number	%
Reasons for preference			
Reason no. 1 for preferring the program	Quality of education	7	6.4
	Convenience for the student resources	1	0.9
	Professional expectations	101	92.7
Reason no. 2 for preferring the program	Quality of education	3	3.2
	Convenience for the student resources	3	3.2
	Professional expectations	89	93.7
Reason no. 3 for preferring the program	Quality of education	2	2.9
	Convenience for the student resources	4	5.9
	Professional expectations	62	91.2

These reasons were determined under three categories for each preference. As can be seen from the examination of Table 4, the factors influencing the preference of the program were stated to be professional expectations at a rate of above 90% in all three reasons given as the reason for preference.

It is understood that their studying in the same field in the high school and the fact that the preferred department is the verbal department, which is included in the sub-breakdowns of the professional expectations, are effective in the program preference. Moreover, they also stated in the question asked about their satisfaction with their program preferences that they were satisfied equally.

5. Discussions and Comments

The fact that women are majority both in terms of profession preference and a desire to get higher education can be considered as a reflection of the sensitivity to the importance of education based on socio-cultural capital, which we can define as a background factor, and the motivation to exist in all areas of social life. However, considering from the point of view of alma mater, the sum of Anatolian high school graduates, regular high school graduates and science high school graduates constitutes a rate of approximately 59%. The fact that vocational high school graduates constitute a

group of 45 people with a rate of 41.3%, and that the phrase "they prefer because it is related to the high school they attend" is included in the sub-breakdowns of our coding strengthens the probability of students coming from the vocational high schools for communication. This is because pre-university education is actually an indicator of targeting to continue university education. The preference of Imam-Hatip high-school graduates, which constitute a very small group, for a university with a communication-related program and the career choice they want to see themselves in the future, and the result of their individualization can be evaluated as their own decision preferences.

In addition, considering the fact that families are more effective in the pre-university education process, it can be considered as a natural result that students who have reached to the university stage turn their steps towards different fields depending on which profession they want to see themselves in the future because they take a more active role in making their own decisions.

It is observed that the education background of the majority of the parents of the participants is mostly high school level and below. The vast majority of women are unemployed, and the majority of men are constituted by those who work in the private sector. Based on the income level of the families and the fact that the hunger threshold is TRY 2,826 (\$339) and the poverty threshold is TRY 9,013 (\$1082) (Türk-İş, 2021) according to the current figures, the students live in the families, approximately 28.5% of whom are living on an income below the hunger threshold while the rest is under poverty threshold. In the light of these data, the fee to be paid to the university gains importance in the university preference of the students (Cokgezer, 2010).

In addition, when the education level and income level of the families are evaluated together, it can be said that they do not have the opportunity of making investment in the education of their children to strengthen the socio-cultural capital, which we define as the background factor. This will inevitably be reflected in the scores that the student gets in the university entrance exams, resulting in the limitation of options in university selection as a natural consequence of these factors.

As a matter of fact, it is seen that the threshold scores of the university chosen/preferred by the students for the student acceptance are high for the students with full scholarship, but rank at quite lower places compared to those with 50% scholarship (URAP, 2021). As for the tuition fees, it can be said that the fact that those with 50% scholarships have to pay approximately TRY 1500 (\$ 180) per month to the university they study for the 2020-2021 academic year plays an important role in the preference of the university and program. It can be said that the fees come to the fore in preference with relative superiority, among the factors of preference, and the students set their goals and are motivated with a sensitivity stemming from the income level of the family (Çokgezer, 2014).

For the question, which was given as an open-ended question in the measurement tool and formulated as "write the factors that influence your university preference in order of priorities, starting with the most important one" and prompted to write five reasons, the students were generally contented to write three reasons. For this reason, our statistical procedures and evaluations were made based on three preference reasons, as seen in Table 3.

The fact that students prioritize the category, which is coded as student expectation in university selection/preference and includes the scholarship opportunities, location and tuition fees in the breakdowns, in other words, the fact that scholarship and fee are stated as the first reason among the factors declared to be effective can be said to be resulted from the sensitivity to the

income level of the parents (Heller, 1997). Undoubtedly, it is highly probable that the “university opportunities” observed to be effective in university preference stem from the expectation that the cost of meeting the personal-social needs of students within the university will be more economical compared to outside. University opportunities correlated with fees are seen as the most important factor in choosing a university with a relative superiority to the students' anxiety about meeting the expenses first (Hoyt & Brown, 2003; Foskett et al., 2006; Agrey & Lampadan, 2014).

Prioritization of the needs at a certain level in the preference as a result of the hierarchy of needs taxonomy, which is put forward by Maslow's (1987) in his motivation theory, and the sensitivity to different levels due to the cultural and ecological environment, in other words, the motivation in university choices/preferences of students, also justifies the theoretical approach in question. In addition, hierarchical levels included in the taxonomy often overlap with each other (Kenrick, et. al., 2010). This is because people can be motivated to needs at different levels of the hierarchy at the same time (McLeod, 2018).

Here, the first of the obstacles that students must overcome on their way to reach the highest level of satisfaction by which they are motivated is meeting the tuition fee and daily expenses so that they can continue their education. The fact that the quality of education, which is among the reasons for the first preference of the majority of the students with a relative priority in all three preferences, is stated in Table 3 as the second preference reason at a rate of 25% after the fee, and that the university opportunities in close association with the fee rank the second and third priority preferences, respectively, followed by the quality of education confirm Maslow's hierarchy of needs theory and the data in the literature, and accounts for the fact that students are sensitive to the fees in the order of priorities, with the sensitivity that the road to quality is crossed through the satisfaction of the needs at the following level, rather than the quality of education. In other words, in our model in Figure 1, expressed as possible relationships, each factors constitutes the quality of the university, but students prioritizes other factors in order of importance with relative superiority as the priorities of the hierarchy, so we can say that each of these factors is effective in the student's choice of university. Thus, it has been concluded that the factors, which are effective in the university preference and put forward in the literature on the subject, and the factors that are effective in the university preference of the students in our research, too.

However, regardless of whether the factors influencing the university choice/preference of the students or the quality of the chosen/preferred university are taken into consideration, all roads lead to the financing, which constitutes the capability of investing in education and is one of the effective factors in the formation of socio-cultural capital in Turkey. Financing is one of the phenomena observed to be an effective factor in increasing the socio-cultural capital of the child, which will provide the opportunity to invest in education from the beginning and carry him/her to success in the later stages. Such a background investment will be influential in the student's choice of high-quality university, which is a combination of other influential factors. These findings match with the research findings which are included in the literature and given in the literature review section of this study (Kim & Gasman, 2011; Maringe, 2006; Pampaloni, 2010; Teranishi et al., 2004; Tierney, 1983). However, considering the place of the university in which they are placed in the ranking of universities in Turkey, we can deduce that the students participating in the study have relatively poor socio-cultural capital. As a matter of fact, according to the scores that students got in the University Selection and Placement exams, they were placed in the university that lives up to their own expectations.

6. Conclusion

Based on the comments and discussions on the research findings, the socio-cultural capital of the students, which is formed as a result of the interaction of many independent variables in the cultural and ecological environment in which they live, is reflected in the scores they get in the University Selection and Placement exam and determines the university options they can choose. Students choose the university where the program is suitable for them, which will enable them to reach the goals they have determined, among these options. In this preference, tuition fee and scholarship opportunity are listed as the most important variables with relative superiority as a result of the sensitivity to the income level of their families.

The university, which has environments where social interaction can be established, offers opportunities to meet current life needs, has features that constitute the content of the quality of the institution, such as the location of the institution, its accessibility, its education quality, its academic staff, its prestige or recognition, and offers the desired program, is the university that confirms the information in the theory and that has an important effect on making the students choose/prefer it as the university to which they desire to attend.

In order to decide which university they want to study at, students not only seek the advice of their relatives and graduates, but also do their research on the web pages of universities and social media tools. Based on these results, the strategies and education policies followed by the universities have an important effect on the students' decision to choose/prefer the university they want to study at. For this reason, it has been concluded that the increase in the probability of the universities to be chosen by students depends on the institutionalization culture, policies and strategies, and their success in planning and implementation.

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ONLINE PRIVACY AND PERSONALIZED ADVERTISING

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Abstract

With the development of technology, personalized advertising became an integral part of the general marketing strategy, which companies then used to somewhat successfully attract and retain consumers' attention. Personalization is the final product of digital tracking, and if a personalized advertisement does not seem invasive, consumers will retain a sense of perceived control over their personal information. In an online environment, consumer information is subject to tracking and storing, regardless of whether the collected information is used for personalization purposes or not, and the effectiveness of personalized advertising as well as the general consumer stance depend on the previously mentioned factor—perceived control. The sense of control determines how concerned consumers will be about the dissemination of their personal information, as well as whether they will take concrete action to protect their privacy. Permission marketing (PEM) is a link between companies and consumers through which data is exchanged at a specific source (e.g., the company's website). By using this method, companies are able to freely place personalized content to consumers who display genuine interest, while consumers retain a sense of control because the ad personalization is done exclusively with their permission. Because of the ability to choose, consumers make the decision to share or retain personal information through a formal psychological process known as the Privacy Calculus theory. This paper covers the theoretical concept of online privacy and personalized advertising, but it also examines the attitude of millennials in Bosnia and Herzegovina regarding the practices of digital tracking and the distribution of personalized advertising. On the sample of 300 respondents, using three different research scenarios specially developed for this research, and using descriptive statistics and regression analysis, the authors have concluded that majority of respondents show significant privacy concerns. This leads to the fact that respondents further show a significant and positive association of privacy concerns with perceived invasiveness, while perceived invasiveness was significantly and negatively associated with purchase intentions.

Key words: Advertising, Consumer Data, Policy, Regulation

JEL classification: M30, M38

1. Introduction

Traditional advertising has serious challenge in conveying the message to target groups due to the “all in one” approach. The advertising industry is in a perpetual process of adapting to market trends and business practices, however, it underwent a complete transformation when the primacy of traditional media was taken over by personal devices with internet access. The gap between traditional and digital advertising has been reduced in the recent past. Lamberton and Stephen (2015) argue that digital marketing has progressed to the point where it can now be referred to simply as marketing because all marketing activities have a digital component. The traditional advertising model was still dominant in the early stages of internet development, but the expansion of digital tracking has gradually evolved into an enhanced personalized experience. This new form of advertising utilizes collected data to target each consumer individually (Lekakos and Giaglis, 2002). Effective personalized interaction is becoming an essential element in the competition for

consumer attention. The concept of interactive marketing promotes personalization with the aim of creating an electronic dialogue with consumers.

Personalized advertising is considered to be a growing trend within online advertising (Brinson, et al., 2016; Tucker, 2014). Over the last few years, online advertising has become highly personalized, with content tailored to the consumers' individual needs. According to Estrada-Jiménez, et al. (2017), personalized advertising is the most effective and lucrative model of advertising. The authors point out that the conversion rate of personalized content is higher than non-targeted ads. Lambrecht and Tucker (2013) see an opportunity to retarget individuals in the absence of purchase. Consumers who revisit a website could be offered products of their interest from their last visit to the website. Those who no longer visit the website become a retargeting material and may be exposed to personalized content regardless of search activities.

There are many benefits to personalization, but a preference for personalized experience comes at a price. The increase in internet use has long been seen as an opportunity for business growth. Consumers perceive personalized advertising as a useful time-saving tool and it is generally accepted. Jung (2017) points out that the impact of personalized advertising is positive if it reinforces the purchase intentions. In contrast, the issue of information control and high intrusiveness affects purchase intentions (Phelps, et al., 2001). Personalized content is a trigger for privacy concerns due to its condition for data collection. Personal information collected without knowledge and consent cause negative stance towards the practice (Xu, et al., 2011). The growing rate of invasive ads leads to greater concerns, which imposes the need for a secure online environment (Tucker, 2014). The question of online privacy is a complex and evolving phenomenon that requires continuous research of factors related to privacy concerns. Personalization is associated with higher consumer loyalty and satisfaction, as well as stronger influence and conversion (Ball, et al., 2006; Liang, et al., 2006). On the other hand, personalized advertising and targeting are related to privacy concerns, which can lead to consequences if consumers perceive the data collecting practice as privacy violation (Castelluccia, et al., 2012). Finding a viable answer to this problem calls for a better understanding of the perception of privacy and intentions regarding personalization.

Data collection remains a latent process unless an individual notices personalized content. Such ads use undisclosed information and include personal data collected by third parties without consent. Privacy concerns arise from the illegal collection and segmentation of personal information. Therefore, the industry regulation is crucial for privacy intervention. However, privacy policies and self-regulation do not provide sufficient protection. Authorities have recognized the need to engage in the information systems and advertising industry to protect consumer privacy. Self-initiative action does not guarantee privacy either, as software protection is compromised by the opportunistic behavior of software developers.

This paper is focused on recognizing the privacy factors that influence millennials' purchase decisions. Various privacy constructs have been employed in past studies, but the use of invasiveness as a fairly new construct is an additional challenge for this research. Rigorous regulations oblige businesses to pursue consumers' consent to data collection and specify how generated information is managed using plain language. This opens up space to explore perceived invasiveness and the support it provides to implementing new privacy practices. Understanding the boundaries of perceived invasiveness allows the reconciliation between consumers and businesses in terms of privacy calculus. Consumers would keep all the benefits of personalized advertising, and businesses would opt for ethical practice without compromising consumer integrity. The research seeks to examine whether there is a link between privacy concerns and millennials' purchase intentions within personalized advertising practices.

2. Personalized Advertising

Personalization is the incorporation of elements into the text related to the targeted consumer (Dijkstra and Ballast, 2012, cited according to Masłowska, 2016). The concept of personalization is narrower than customized (tailored) communication, since the latter is an umbrella term for personalization, feedback, contextual matching, source matching, and consumer exposure (Dijkstra, 2008). According to the same author, identification, growing expectations, and contextualization are just layers of personalization within computer-based communication adaptation. The same classification is also called personalization tactics (Masłowska, 2011; Masłowska, 2016).

Companies leverage data segmentation to improve ad relevancy, reducing the risk of irritation and the effectiveness of personalized advertising (Girona and Korgaonkar, 2018). However, various studies have found a negative consumer attitude towards personalized advertising that is not even affected by factors such as time, level of education on digital tracking practice and adoption of advanced advertising technology (White, et al., 2008; Aguirr, et al., 2015; Frick, 2016; Karwatzki, 2017; Matic, et al., 2017; Bol, et al., 2018; Boerman, et al., 2021). Consumers informed about data collection, dissemination, and potential secondary use of personal information, make significant technological and non-technological efforts to protect against potential risks (Li and Nill, 2020).

Privacy and information privacy are differentiated in studies related to online privacy and consumer data protection. A crucial variable to similar studies is information privacy, which refers to the ability to control the dissemination of consumer information (Burgoon, 1982). An individual supported by regulatory mechanisms may partially influence how personal data is manipulated by third parties. Perceived control of personal data is an important element of online privacy because personal data has been treated as a consumer good since the early 1990s (Davies, 1997).

If a unit is tied to a monetary value, it becomes the subject of calculation. In the online environment, the concept of privacy transaction is studied through a privacy calculus model. According to this model, an individual evaluates the relationship between expected benefits and perceived risk in terms of privacy. The concept was coined in the multidimensional development theory (Lwin and Williams, 2003), according to which an individual engages in social interactions only if the estimated benefit outweighs the risk of disclosing personal information (Homans, 1974). However, Rogers (1983) argued that a simple calculation was not realistic, as the risk-benefit ratio could not be calculated but only psychologically perceived. This limitation causes discussions on the privacy paradox, which is at the center of inconsistency of attitudes and behavior. The main causes are cognitive limitations (Simon, 1982) and information asymmetry (Wilson and Valacich, 2012). Occasionally, an individual cannot process all imposed information due to the biological limitations of the nervous system (Csikszentmihalyi, 1990). The conflict of commercial interests and the neglected right to personal data protection has led to the erosion of privacy over the years (Shapiro and Baker, 2001).

2.1. Online Behavioral Advertising

The European Institute for Interactive Advertising describes online behavioral advertising (OBA) as the collection of data from each individual computer or device about web behavior over a period of time and across multiple web domains. The main goal of using relevant data is to predict consumer preferences or interests and distribute ads to each computer or device created in accordance with the predictions made (IAB UK, 2018). OBA is considered a type of personalized advertising, as interest-based ads are a form of personalization (Carrascosa, et al., 2014). As a result of extensive online tracking (Puri and Mohan, 2020), OBA is possible thanks to metadata (FTC, 2007) from web searches, social networks, mobile applications and IoT with special emphasis on self-initiated monitoring or personal analytics (Kneidinger-Müller, 2017).

Digital tracking techniques are present in a variety of contexts, but when it comes to tracking of online activities, the web context and cookies stand out the most. Digital tracking by tag (cookie) does not result in direct identification of a consumer by name but by interests and online activities (Beales, 2022; Backes, 2012). Components of online behavior include web search, data on the format of content consumed, applications used, purchases, click-through rates, and communication that includes e-mails and posts on social media. The data used for OBA can vary significantly, so the same applies to the level of personalization (Zuiderveen Borgesius, 2015a). Advertisers never use the entirety of consumer data collected for ads.

Consumer perception of OBA fluctuates heavily. Negative response to high personalization is present due to greater consumer awareness (Harper, 2014; Dehling, 2019). Also, individuals educated on digital tracking and dissemination of personal data show intention to invest more in privacy protection (Li and Nill, 2020).

Businesses demonstrate unethical practice in relation to consent—privacy notice agreements openly support collection of personal data. In this regard, Thomas, et al., (2008) differentiate between consumer-friendly consent and one that offers consumers no option other than accepting specified conditions of a digital platform. The intensity of compliance depends on the extent of information shared with digital platforms. High intensity is determined by factors such as the specific quantity or quality of information and its flexibility of application (Krishnamurthy, 2001).

2.2. Relevance of Personalized Advertising

Relevance of personalized advertising indicates that the ad content corresponds to the interests and needs of consumers. The path to relevance can be ethical or consumer-friendly, as is the case with Permission Marketing (PEM) and email. Consent is the basis of the relationship between consumers and businesses. This gives consumers certain control over their personal information (Awad and Krishnan, 2006; Lee and Cranage, 2011), while businesses generate profit through obtaining essential information about consumers (Xu and Zhou, 2013). On the other hand, digital tracking is more frequent than the concept of PEM and both encompass the opt-in option. A specific emphasis on the individual needs and interests will make the ad more relevant, therefore personalization will be more successful (Claypool, et al., 2004).

The key variables needed to reach optimal relevance of data-based ads are the frequency (Claypool, et al., 2004) and appropriate volume of personal information used for personalization (Alreck and Settle, 2007). The information reaches optimal relevance when it becomes relevant enough for an individual to process it. Relevance has several layers, meaning that one piece of information is more or less relevant than another. The input relevance scale is measured by contextual effect and process effort. When a particular statement (information) is comprehended with less cognitive effort, the information itself is more relevant. The contextual effect occurs when new information correlates with the context of old, already known, information. The process effort depends on the resources a person invests in creating an appropriate context for interpreting new information (Xu and Zhou, 2013).

Oftentimes, relevant ads fail to deliver the expected results as consumers react differently to personalized content (White, et al., 2008). Critical processing of ad content is fundamental for consumers. During an ad exposure, consumers recognize that such communication is the result of collected data, resulting in reactance (Girona and Korgaonkar, 2018).

2.3 Privacy Calculus

The privacy calculus model can simply be presented as the relationship between the expected benefit and the perceived risk in terms of consumer privacy. The model's premise that an individual rationally evaluates risk and benefit is simultaneously the main drawback. Namely, the

assessment of the outcome of a certain behavior is vague, as risk-benefit ratio cannot be calculated but only psychologically perceived (Rogers, 1983). Knijnenburg, et al. (2017) present a descriptive and prescriptive aspect of the model. Privacy calculus, as a descriptive theory, starts from the stated premise that consumers use a rational cognitive process to assess the risks and benefits of sharing personal information. The prescriptive version of the privacy calculus model favors a contextual approach and proposes a consumer-friendly privacy concept. The adaptive (contextual) approach refers to the transfer of responsibility for decision-making from consumers to an algorithm that takes a few items into account—context, characteristics of consumers, the history of consumer decisions of similar profiles. Due to the moral dilemma rooted in the adaptive approach and the untenable basic premise, the information disclosure process opens the question of relevancy (Quizhang, et al., 2020).

One of the most common forms of privacy calculus research is the internet, with an emphasis on online privacy. The internet as a concept is too complex for a theory like the privacy calculus to cover all layers of the internet from a single point of view. In this regard, studies on privacy calculus are conducted through different contexts in order to display the independent and diverse effects of the internet on the consumer psychology. In addition to the general context of the internet, privacy research encompasses e-commerce (Dinev and Hart, 2006), mobile applications (Xu, et al., 2009), social networks, and Internet of Things services (Kowatsch and Maass, 2012). Clear distinction between physical privacy and information privacy is not established and therefore disciplines such as law, marketing, information systems management and economics do not distinguish between the tangible and intangible dimensions of privacy (Smith, et al., 2011). Traditional approaches gravitate toward linking privacy to concepts such as law, limited access, and control, but, concepts, definitions, and connections are not consistent, sufficiently developed, and empirically valid. Furthermore, newer modern studies present privacy as a multidimensional and resilient context-dependent phenomenon that varies according to life experiences (Xu, et al., 2011).

Taking the context of the internet as an example (Dinev, et al., 2013), privacy as a broad and fragmented concept (correlated with discipline) is presented as information privacy. According to one of the generally accepted classifications of privacy (Burgoon, 1982), information privacy is characterized as the ability to control the collection and dissemination of information. The basic feature of the internet is that users leave permanent traces, which is considered a fundamental item of online privacy. Given that information and privacy are seen as consumer goods, it is important for consumers to decide whether to disclose personal information in exchange for a benefit, by assessing perceived risk and expected benefits. This again points to the premise of the model that disclosure decision is a rational process. According to Dinev, et al., 2012, control is the foundation of privacy and is strongly differentiated from the very concept of privacy. Following the example of (Culnan and Armstrong, 1999; Spiekermann, 2005) control is divided into:

- Control of the information-sharing process
- Control of the use of shared information

Loss of control increases privacy concerns (Culnan and Armstrong, 1999; Piao, et al., 2016; Tucker, 2014) which can block business expansion (Hoffman, et al., 1998; McKnight and Chervany, 2002; Urban, et al., 2009). Also, empirically valid conclusions suggest a decline in privacy concerns if consumers have greater control over personal information (Awad and Krishnan, 2006; Lee and Cranage, 2011). In the privacy calculus model, the growth of perceived privacy control can be seen as a benefit, because as such, it ultimately reduces privacy concerns and perceived invasiveness.

2.4. The Privacy Paradox and Invasiveness

The privacy paradox is mainly related to the privacy calculus model, which starts with the premise that risk assessment of disclosure of personal information is a rational cognitive process

(Knijnenburg, et al., 2017). According to the privacy calculus, consumers strive to maximize benefits and minimize risk. With privacy calculus, this natural tendency is specified by the theory of expectations (Burgoon and Burgoon, 2001). The unfounded risk mitigation and limited (asymmetric) information is imminent to the assessment. Data collection, segmentation, and trading are not disclosed by third parties, and it may restrict consumers from unbiased assessment of risk and benefits. Information asymmetry is the most common cause of partial information (Wilson and Valacich, 2012). As a result of these limitations, uninformed consumers rely on heuristic methods when making decisions (Dietrich, 2010).

The past literature on online privacy is limited for two reasons. First, empirical research has been focused exclusively on analyzing consumer intention regarding the disclosure of personal information, rather than comparing it to actual behavior. Second, situation-specific calculus was assumed to be rational, without analyzing the influence of situation-specific factors on irrational behavior (Wilson and Valacich, 2012). The more consumers are educated about protection strategies, the higher the perception of risk is, but practice has shown that this is not a sufficient reason for the strategies to be implemented. Regardless of the theoretical interest of consumers in protecting their privacy, they rarely act in accordance with their interests. Decisions aimed at managing online privacy are not cohesive with consumer preferences, leading to a disparity between preferences and behavior (Barth and De Jong, 2017). A possible explanation for the privacy paradox is that general privacy concerns are overridden by situation-specific factors.

Invasiveness as a concept is difficult to separate from privacy concerns for the reason that this concept would not exist if consumers did not reconsider the practice of online tracking. Thus, privacy concerns means that consumers are concerned about the practice of tracking which is a result of individual development, environmental influences, and social interactions (Lwin and Williams, 2003). Acknowledging the fact that the environment and experiences shape an individual's attitude, the invasiveness of advertising based on personalization can be described as a consumer's view of a clear violation of online privacy (Wieczorkowski and Polak, 2017).

Targeting is a result of complex algorithmic processes that determine potential interest in a particular product based on the segmentation of raw data. If consumers recognize the value of a product, there is a greater chance that a personalized ad will lead the consumer to buy said product. If the advertised product contains a certain value for the consumer, part of the value is also transferred to the ad, ending in greater relevancy (Xu and Zhou, 2013). The value of advertising is subjective and depends on the factors of information, deception, irritation and entertainment (Ducoffe, 1995). In the IAB (2016) study, ad value is defined as "the specific value relevant to the consumer that the consumer adopts in exchange for his time". Thus, the consumer consciously chooses the interaction with the ad, invests his time and his agreement to the collection and use of personal information.

Based on the previous literature review, and having the research objective in mind, authors propose the following hypothesis:

H1: Privacy concerns in the context of personalized advertising negatively affects purchase intentions.

H2: Privacy concerns have a positive effect on the perceived invasiveness of personalized advertising.

H3: Perceived invasiveness of personalized advertising negatively affects purchase intentions.

3. Methodology

The main goal of this research is to determine the impact of privacy concerns related to personalized advertising on the purchase intentions of millennials in Bosnia and Herzegovina. It also seeks to examine the attitude of the target group toward the perceived invasiveness of personalized advertising and the tendency to share personal information on the internet.

The research instrument is a questionnaire based on scenarios. Taking into account the nature of the phenomenon, data collection through a scenario questionnaire was approached not only for technical facilitation but also for fundamental ethical and legal issues. Due to increased regulation in the industry and a stronger commitment to consumer protection, digital tracking was not an acceptable approach. Namely, data collected for an academic study is perceived identically as data collected by businesses (Chassang, 2017). Also, secondary sample data obtained from a data broker violates ethical and legal frameworks (Fortin and Knoppers, 2009). Both reasons lead to the scenario-based survey as the optimal approach. Scenario-based questionnaires are often used in academic studies due to listed barriers. Respondents were randomly assigned a questionnaire with a scenario with specified guarantee of data privacy and anonymity. Scenarios had a task to examine the possible discrepancy in attitudes caused by the respondents' knowledge about data collection techniques and use of personal information. A control group was part of the first sub-sample and the scenario generally describes the practice of personalized advertising. Besides general information about ads using the personalization, the second scenario encompassed a situation in which personalized advertising was created as a result of search history. Finally, the third group received the most complex scenario. In addition to the general description an advertisement based on personalization was created using the metadata on consumers (search history, social media posts, email, etc.).

Scales of measurement with previously proven reliability in past studies were used for the operationalization of the construct questionnaire. A pilot study was conducted on a sample of 10 respondents. The questionnaire included four questions on demographics, followed by questions on privacy concerns construct which was measured using the Internet Privacy Concerns scale (Dinev and Hart, 2006). The Perceptive Invasiveness scale was taken from the Invasiveness Perceptions scale (Tepper and Braun, 1995), while purchase intentions were examined through the Behavioral Intention to Use the System (Venkatesh, et al., 2003).

The sample included 300 respondents with permanent residence in Bosnia and Herzegovina. According to the gender structure, the ratio of respondents was approximately the same, with the majority participation of men being 51.3%. The respondents belong to the generation of millennials born between 1981–1996. The highest percentage of participation in the research was taken by individuals with acquired university degree, 192 of them, or 64%. They are followed by respondents with acquired high school diploma, with a share of 21.3%, and masters of 13.7%. According to the structure of employment, respondents who are employed full-time form the largest group, which makes up 80.3%, i.e., 241.

3.1. Research Results

The answers of 300 respondents were collected, on the basis of which the analysis was performed. A sub-sample of 100 respondents was formed for each scenario. The analysis of the results can be interpreted in two ways—cumulatively, for central statistical analysis, and partially, when analyzing the results of sub-samples. The collected data was processed using statistical techniques and methods of descriptive statistics, while the IBM SPSS Statistics software was used to process and analyze the collected data. Auxiliary (demographic) questions were coded together with a set of basic questions represented by the Likert scale.

Cronbach's coefficient values greater than 0.7 confirmed the reliability of the measurement scale for all variables included in this study.

To examine the practical impact of privacy concerns on purchase intentions, the following variables were used—privacy concerns (PC), perceived invasiveness (PI), and purchase intentions (BI). Within the regression model, a linear regression calculation was performed for each hypothesis.

In the first hypothesis, the objective of the research was to test the connection between privacy concerns on the one hand, and purchase intentions on the other. Both variables were

measured using the Likert five-point response scale, with the value of the variables defined as the sum of the individual responses to their indicators.

Table 1. Summary of the model (H1)

<i>Model Summary</i>				
<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>
<i>I</i>	0.106	0.011	0.008	2.81328
a. Independent Variable: PC				
b. Dependent Variable: BI				

The coefficient of determination 0.011 is highlighted in the model summary. The value of the coefficient means that 1.1% of the value of the dependent variable is explained by an independent variable, i.e., that the linear model explains 1.1% of the variance of the intent variable. The value of the corrected coefficient is 0.008 and it can, as a rule, be equal to or less than the coefficient of determination, but in most cases, it is lower.

Table 2. Regression analysis coefficients (H1)

<i>Model</i>	<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>	<i>t</i>	<i>Sig.</i>	
	<i>B</i>	<i>Std. Error</i>	β			
1	Constant	8.500	0.624		13.620	0.000
	PC	-0.082	0.044	-0.106	-1.841	0.067

The table of regression coefficients analysis is one of the most important overviews of the model, as it includes standardized coefficient β , non-standardized coefficient B and significance. The value of the non-standardized coefficient β is -0.082, which confirms the negative relationship between privacy concerns and purchase intentions. The negative relationship between the two variables implies that the growth of the independent variable causes a decrease in the dependent variable, i.e., the variables form an inversely proportional relationship. This means that the growth of privacy concerns causes a decline in purchase intentions. With the standardized coefficient β , the correlation is negative (-0.106), i.e., with an increase in privacy concerns in the amount of one standard deviation, purchase intentions decrease by 0.106 standard deviations.

Privacy concerns do not make a significant contribution to predicting purchase intentions. Significance greater than 0.05, in this case 0.067, leads to the **rejection of the hypothesis H1**.

The model for the second hypothesis is shown in the Table 3.

Table 3. Summary of the model (H2)

<i>Model Summary</i>				
<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>
<i>I</i>	0.684	0.468	0.467	1.77211
a. Independent Variable: PC				
b. Dependent Variable: PI				

The coefficient of determination of 0.468 shows 46.8% of the value of the dependent variable explained by the independent variable, i.e., the linear model explains 46.8% of the variance of the perceived invasiveness variable. The corrected coefficient of determination is 0.467.

Table 4. Regression analysis coefficients (H2)

<i>Model</i>		<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>	<i>t</i>	<i>Sig.</i>
		<i>B</i>	<i>Std. Error</i>	β		
1	Constant	4.163	0.393		10.589	0.000
	PC	0.454	0.028	0.684	16.206	0.000

The value of the non-standardized coefficient B is 0.454, which means that the growth of privacy concerns causes an increase in perceived invasiveness. The same trend was observed with the standardized coefficient β , with an increase in privacy concerns in the amount of one standard deviation leading to an increase in perceived invasiveness in the amount of 0.684 standard deviations. Privacy concerns make a significant contribution to predicting the perceived invasiveness of personalized advertising. The significance was less than 0.05, on the basis of which **the hypothesis H2 was confirmed**.

Finally, the third hypothesis is summarized in the Table 5.

Table 5. Model summary (H3)

<i>Model Summary</i>				
<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>
1	0.135a	0.018	0.015	2.80334
a. Independent Variable: PI				
b. Dependent Variable: BI				

The coefficient of determination of 0.018 shows 1.8% of the value of the dependent variable explained by the independent variable, i.e., that the linear model explains 1.8% of the variance of the perceived invasiveness variable. The value of the corrected coefficient of determination is 0.015.

Table 6. Regression analysis coefficients (H3)

<i>Model</i>		<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>	<i>t</i>	<i>Sig.</i>
		<i>B</i>	<i>Std. Error</i>	β		
1	Constant	9.011	0.708		12.730	0.000
	PI	-0.157	0.067	-0.135	-2.352	0.019

The value of the non-standardized coefficient B is -0.157, while the standardized coefficient is β -0.135, which means that with the increase in the perceived invasiveness of personalized advertising, there is a decrease in purchase intentions. Privacy concerns make a significant contribution to predicting purchase intentions. Significance of 0.019 fulfills the conditions for **accepting the hypothesis H3**.

Table 7. Matrix of correlation coefficients

			<i>1</i>	<i>2</i>	<i>3</i>
<i>1</i>	<i>PC</i>	Sig. (2-tailed) Pearson Correlation N	1 300		
<i>2</i>	<i>PI</i>	Sig. (2-tailed) Pearson Correlation N	0.000 0.684** 300	1 300	
<i>3</i>	<i>BI</i>	Sig. (2-tailed) Pearson Correlation N	0.067 -0.106 300	0.019 -0.135* 300	1 300

By calculating the Pearson coefficient, it was found that the correlation between privacy concerns and perceived invasiveness of personalized advertising (0.684) was positive and statistically significant (Sig. = 0.000). The correlation between the perceived invasiveness of personalized advertising and purchase intentions is also significant (Sig. = 0.019) and the value of the coefficient is negative, -0.135. The correlation between privacy concerns and purchase intentions is negative (-0.106) and has no statistical significance (0.067).

In addition to the total sample, hypothesis testing was performed on each of the sub-samples by recalculating the coefficients and reviewing the statistical significance. The sample consisted of equal groups or sub-samples, with each group including 100 respondents. Applying a regression model to the sub-samples, the results were compared for each of the scenarios. The aim of the comparison was to check whether the similarity or difference in attitudes is caused by learning about the sources of personal information used for a personalized ad. A similar procedure has been applied in several studies (Girona and Korgaonkar, 2018; Baek and Morimoto 2012). The following table contains the coefficients for each of the groups in the sample.

Table 8. Comparison of scenarios

		<i>Total</i>	<i>Scenario 1</i>	<i>Scenario 2</i>	<i>Scenario 3</i>
<i>H1: PC > BI</i>	Standardized β Sig.	-0.106 0.067	-0.222 0.027	-0.148 0.142	0.041 0.683
<i>H2: PC > PI</i>	Standardized β Sig.	0.684 0.000	0.612 0.000	0.739 0.000	0.682 0.000
<i>H3: PI > BI</i>	Standardized β Sig.	-0.135 0.019	-0.125 0.214	-0.222 0.027	-0.029 0.776

From the attached results of the regression model, it is possible to notice that the first hypothesis achieves statistical significance ($p < 0.05$) only in the control group, i.e., respondents who answered the questions after reading scenario 1. This scenario only superficially describes the practice of digital tracking and does not provide insight into the specific sources used to create an advertisement based on personalization. Also, there is a deviation in the values of the standardized β coefficient, where for the scenario 3 the coefficient is positive within the hypothesis that predicts a negative relationship.

The negative impact of the independent variable on purchase intentions is set within the third hypothesis, and the independent variable in this case is the perceived invasiveness of

personalized advertising. Statistical significance was achieved only for scenario 2. The standardized coefficient β has a higher value than the standardized coefficients for other scenarios and the total sample, but a negative coefficient of -0.222 for scenario 2 indicates that the regression model causes a slight change in purchase intentions. Scenario 2 states that an advertisement based on personalization is created based on historical search data of the product that is the subject of the ad. Previous research has shown (White, et al., 2008; Okazaki, et al., 2009; Baek and Morimoto 2012; Girona and Korgaonkar, 2018) that consumers show a higher level of sensitivity to techniques that use more sensitive data such as specific social media posts, communication via e-mail or geofence. In this case, regardless of statistical significance, the results show a more pronounced negative reaction to an ad based on search history than to an ad that draws more intimate information.

A positive relationship between the variables is predicted under the second hypothesis, where the independent variable privacy concerns affects the dependent variable perceived invasiveness. The results for each of the scenarios are statistically significant. The standardized β coefficient has a high value in each sub-sample, showing that the use of personal information makes personalized advertising invasive. Regardless of the fact that the presence of perceived invasiveness has been confirmed, the respondents show a willingness to make a purchase of a product offered through a personalized advertisement. It has been shown in several studies that consumer intentions are not in line with attitudes (Barth and De Jong, 2017). One of the reasons for possible discrepancy in the results is the action of factors that were not the subject of the study, such as relevance of the content, which the respondents used as a basis for their opinion. (Franke, et al., 2009; Goldfarb and Tucker, 2011; Zhu and Chang, 2016).

4. Research Discussion

The aim of the research is to examine whether the privacy concerns related to personalized advertising affects the purchase intentions of millennials in Bosnia and Herzegovina. The examination of the relationship between the two constructs was performed following the theoretical framework of the privacy calculus model. According to the model, consumers decide whether the benefit of personal information disclosure in a particular situation outweighs the benefits. For the purpose of this test, the relationship of these constructs is specified within the first hypothesis. The predicted negative relationship between privacy concerns and purchase intentions of millennials in Bosnia and Herzegovina is not confirmed due to statistically insignificant results. Considering the survey results, it can be argued that privacy concerns cannot directly predict purchase intentions. Past studies confirm that consumers perform a risk-benefit calculation of all factors when assessing privacy concerns (Culnan and Armstrong, 1999) and an identical approach was expected in the formed sample. Willingness to share personal information is generally higher if the perceived benefit is important to the consumer (Bol et al., 2018). In everyday online interactions, respondents accept the terms of use and disclose personal information for particular benefits. Findings in the context of social networks (Dienlin and Metzger, 2016), smart devices (Cho, et al., 2018) and e-commerce (Dinev and Hart, 2006) support the statement above.

Observing the frequency of responses, it is apparent that between 48-60% of respondents show moderate or absolute privacy concerns, while 57-66% of the sample bypass interaction with personalized advertising, i.e., purchase. The direct impact of privacy concerns on consumer intentions was observed in previous works (Baek and Morimoto, 2012; Dolnicar and Jordaan, 2007). However, the analysis found that privacy concerns do not determine the purchase intentions of millennials in Bosnia and Herzegovina, which may lead to the premise that intentions are influenced by factors not analyzed in this study. Between privacy concern and purchase intentions, there are several essential constructs that directly or indirectly determine purchase intentions. First, the control of personal information determines concern (Culnan and Armstrong, 1999). Also, the UIIPC model, which includes awareness and attitude about data collection and control, shows a

significant correlation with intentions (Malhotra, et al., 2004). The entire IUIPC would offer statistically deeper insight in the case of millennials. Furthermore, direct relationship between privacy concerns and perceived invasiveness may be mitigated or exacerbated by relevance (Gironda and Korgaonkar, 2018, Zhu and Chang, 2016).

The results show a significant and positive association of privacy concerns with perceived invasiveness. Privacy concerns refer to concern about potential loss of privacy (Malhotra, et al., 2004), while invasiveness refers to the perception that data collection practice violates privacy (Wieczorkowski and Polak, 2017). Rise of concern regarding online tracking practices imply a greater possibility of negative perceptions of practice. Therefore, with more intense concerns, consumers are expected to be more likely to perceive the practice of personalized advertising as invasive. As remarked earlier, the optimal relevance of a personalized ad is key to consumer interaction with the ad. However, if a source of the information used for personalization is undisclosed while the ad precisely targets interests, consumers may resist personalized advertising, as sensitive information correlates with intentions (Malhotra, et al., 2004). This argument is consistent with the existing findings, where consumers show a higher sensitivity to practices that use sensitive personal information (White, et al., 2008; Okazaki, et al., 2009; Baek and Morimoto 2012; Gironda and Korgaonkar, 2018). In the case of millennials in Bosnia and Herzegovina, sensitivity to information is recorded but is not in line with expectations, as the results show a more pronounced negative reaction to an ad based on search history (Scenario 2) than to an ad based on sensitive information (Scenario 3).

Perceived invasiveness was significantly and negatively associated with purchase intentions, as proposed. The result of the study is in line with the findings of Zhu and Chang (2016) and Gironda and Korgaonkar (2018). Recognizing the relationship, advertisers in Bosnia and Herzegovina should find new methods to reduce the perceived invasiveness of personalized advertising (i.e., reduce the cost of the privacy calculus), which would encourage a raise in purchase intentions. It is suggested that, in order to increase the relevance of the content and reduce the perceived invasiveness, ads should be tailored in accordance with the interests of consumers. In the privacy calculus, perceived invasiveness represents the price, and its reduction should cause an increase in purchase intention. Relevant ads save time and resources for consumers, reinforcing the benefits of personalized advertising and alleviating privacy concerns.

After analyzing the results, it is possible to conclude that certain aspects of the research support the results of previous research that focused on the same issue. The results of this research may be of interest to advertising industry in Bosnia and Herzegovina. Findings explain the relationship between consumer perception and intention in terms of personalized advertising, and can suggest effective techniques to increase purchase intentions.

Conclusion

Measuring privacy concerns has led to the conclusion that there is genuine concern about the information trade market and vulnerable position of consumers. Transparency and the transfer of information control onto consumers could help personalized advertising be recognized as an acceptable communication channel for consumers.

This paper shows that millennials in Bosnia and Herzegovina do not form attitudes and intentions in the same way as their peers in other research context. The discovery of factors, which are likely to have a cultural background, can significantly improve the application of personalized advertising techniques in a market which potential has not been fully exploited. One of the drawbacks of this paper is that it aims millennials, thus it is not possible to draw a conclusion for the entire population. In this regard, research aimed at other generations can consolidate results and provide useful conclusions. Generation X makes a significant share of consumer potential in the market of Bosnia and Herzegovina, and the same goes for generation Z, which will have dominant purchase power in the near future. Another factor that should be taken into account are

the conclusions of numerous studies that discuss how being informed about the practice of digital monitoring and digital literacy in general leads to reactance. Generation Z grew up with digital devices and internet culture and are more educated in this field than the older generations, which can be a big challenge for participants in the advertising industry. Generation X, on the other hand, may show greater tolerance for the practice of personalized advertisement in the time to come. According to Eicher et al., (1986), people of more mature age feel less social pressure. This may mean that members of Generation X interact more easily and share personal information.

The basic limitation of this research is the statistical model, because the empirical framework is supported by a linear regression model and the calculation of correlation coefficients. Unlike previous research in the field of online privacy, which includes not only a larger number of constructs, but also a more complex analysis such as SEM, this paper includes three constructs and a basic analysis. Also, the comparison of scenarios does not provide a realistic image of how the source of personalized ad information impacts the formation of consumer purchasing intent. Namely, each context of online privacy contains specifics that determine the formation of both attitudes and intentions. In this research, the last scenario consolidated channels such as social networks, e-mail, the Internet, and e-commerce to highlight the role of metadata in serving advertising industry in creating personalization with the customers. In this regard, it is difficult to distinguish which of the above channels is the most important to the respondents, and how much their intentions vary in each of the channels. For greater efficiency of scenario-based testing, it is necessary to choose a single context and use its basic features and variations to create a scenario.

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