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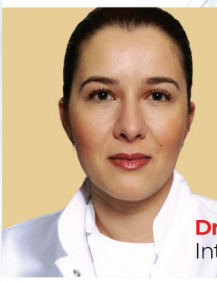

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This edition of *Ekonomika preduzeća* starts with a contextual topic in the *Economics of Organizations and Industries* section. *J. Minović, V. Aleksić* and *S. Stevanović* explore the causal relationship between institutional quality measures and real gross domestic product (GDP) growth in SEE (South East Europe) countries in the 1996-2016 period. The authors indicate that there is a unidirectional homogeneous causality from political stability to real GDP growth, from the control of corruption to government effectiveness, from the rule of law to the control of corruption and from government effectiveness to political stability. The second paper in this section, written by *G. Kokeza* and *M. Paunović*, analyzes the characteristics of intellectual capital, competitiveness and industrial policies of innovation-intensive sectors in Serbia. The authors conclude that further development of innovation-intensive sectors implies the application of appropriate industrial policies specific for containing the elements of both vertical and horizontal policies which should focus on encouraging development and innovation. In their paper, *I. Domazet*, *D. Marjanović*, *D. Ahmetagić*, and *M. Bugarčić* analyze the correlations and conditionality of exports of HTP (share of exports in total country exports) and selected indicators that have an impact on innovation: GDP, R&D costs, degree of education of the population, number of researchers (in four sectors) and the global innovation index. The results of the research indicate that if the analyzed countries do not find resources to intensify investment in education and R&D, they will not reach the average EU innovation indicators for many years ahead.

In the *Tourism* section, *S. Vujović, N. Vujić, J. Premović* and *M. Kalinić* determine the relationship between socio-demographic variables and the respondents' opinions on the advantages of Belgrade's tourist offer over other European capitals as tourist destinations. In the second paper, a trio of authors, *A. Đorđević*, *S. Topalović*, and *V. Marinković*, analyzes the effects of four dimensions of perceived value (functional, economic, emotional and social) on the loyalty of service users in hotel and tourism industries. The results of the research show that out of the four dimensions of perceived value, two key dimensions (emotional and social) have a statistically significant influence on the loyalty of hotel service users.

In the *Finance* section, *S. Drljača Kanazir* estimates the degree of systemic risk exposure of the Serbian banking sector's loan portfolio in the period from 2008Q4 to 2019Q3, observed also in terms of the main commercial segments (corporate and retail). The results of the research corroborated the truthfulness of both hypotheses, which has a multifold significance for commercial banks' management, as well as for macroeconomic and macroprudential policymakers. In the *International Economics* section, *A. Kemiveš* and *L. Barjaktarović* examine

the impact of external factors on the dynamics of foreign direct investment (FDI) trends in specific economies. Finally, *M. Petrović, D. Rajin, D. Milenković* and *D. Marić* examine in their paper the influence of eWOM on factors such as social norms, initial trust, perceived usefulness, ease of use, attitude and intention of using mobile banking in the territory of Serbia.

Prof. Dragan Đuričin, Editor in Chief

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ECONOMIC GROWTH AND INSTITUTIONAL QUALITY IN SOUTH EAST EUROPE

Ekonomski rast i kvalitet institucija u Jugoistočnoj Evropi

Abstract

The paper researched the causal relationship between institutional quality measures and real gross domestic product growth (GDP) on the South East European (SEE) countries in the period 1996-2016. To achieve the aim of this research the panel techniques (the Dumitrescu-Hurlin non-causality approach) were used. The SEE suffers from very poor control of corruption, as well as significant political instability, the weak rule of law and poor government effectiveness. Our results indicate that there is unidirectional homogeneous causality between political stability and real GDP growth. Control of corruption leads to government effectiveness. The rule of law leads to control of corruption, and government effectiveness to political stability. Additionally, there is a bidirectional homogeneous causality between the rule of law and political stability. Thus, the research found some empirical evidence that stronger institutional measures cause higher economic growth.

Keywords: *causality, economic growth, government effectiveness, corruption, political stability, rule of law*

Sažetak

U radu se istražuje uzročna veza između kvaliteta institucionalnih mera i realnog rasta bruto domaćeg proizvoda (BDP) u zemljama Jugoistočne Evrope u periodu 1996-2016. godina. Radi dostizanja postavljenog cilja istraživanja, korišćena je panel tehnika (Dumitrescu-Hurlin test). Teritorija Jugoistočne Evrope ima veoma lošu kontolu korupcije, zatim značajnu političku nestabilnost, slabu vladavinu prava i slabu efikasnost vlade. Rezultati pokazuju da politička stabilnost homogeno uzrokuje rast realnog BDP, a da kontrola korupcije uzrokuje efikasnost vlade. Vladavina prava uzrukuje kontrolu korupcije, a efikasnost vlade utiče na političku stabilnost. Dodatno, postoji dvosmerna homogena uzročnost između vladavine prava i političke stabilnosti. Stoga, istraživanjem se dolazi do određenih empirijskih dokaza koji pokazuju da jače institucionalne mere dovode do višeg ekonomskog rasta.

Ključne reči: *uzročnost, ekonomski rast, efikasnost vlade, korupcija, politička stabilnost, vladavina prava*

Introduction

In the second half of the twentieth century, the economies of the South East European countries had different historical experiences regarding global economy. While countries such as Greece and the former Yugoslavia were relatively open and internationally integrated, Albania was almost completely isolated, which would further slow down its integration into international markets. With the end of the Cold War and the fall of the Berlin Wall, the state economy of most South East European countries collapsed rapidly [55, p. 645]. Industrial production and living standards have fallen, while unemployment and prices have risen. Thus, for example, many economies of the region recorded a decline in the gross domestic product (GDP) in the period 1990-91 in some cases by over 20 or even 30 percent. Unemployment rose from zero at the same time to over 10 percent, while inflation hit double or triple digits [43, p. 17]. Consequences of political upheaval and war conflict strongly influenced local economies at that time completely separated from world markets. International sanctions imposed deliberate isolation of Serbia and Montenegro. The Greek trade embargo against Macedonia in the dispute over the name of the country has effectively isolated this country for many years. Most of them found themselves on the European "super outskirts", characterized by de-industrialization and high unemployment, ethnic and regional fragmentation, political turmoil and general instability [55, p. 651]. At the same time, the collapse of the Soviet Union hit Romania and Bulgaria. Almost overnight, a guaranteed trade partnership disappeared and it was replaced by fifteen young and economically weak states. In addition, most South East European countries were heavily indebted to Western banks and governments. Hungary had the largest debt per capita (over $ 2,500) and over $ 20 billion, while Bulgaria owed nearly $ 10 billion. Unlike them, Romania paid off its external debt during the Ceausescu regime, but at the cost of total impoverishment of the population [43, p. 19]. Integration into international trade was interrupted, which led to a chronic balance of payment deficit. Low inflows of international capital as a consequence of the high risk of many countries dramatically slowed down technological development and weakened international competitiveness. However, the socialist elite remained a powerful political group in the initial phase of the transition process in most transition countries, but its power was different in different countries, depending on whether they were in power alone or in coalitions with new democratic movements. The socialist elite or nomenclature which was in power, did not have the incentive to create institutions that would encourage competition, as this would reduce their economic power, which also slowed the economic development of many countries in the region [32], [15].

After the year 2000 and democratic changes in Croatia and Serbia, the EU has become much more engaged in the whole region, so the Europeanization of both political and economic strategies has replaced the former independent national economic development programs. The huge influx of international assistance was followed by consultants in the field of international politics who dramatically influenced national and local policies. However, according to Bartlett [6], this process of policy transfer was not consistent because it reflected the various non-compliant views of European representatives on the ground. Since the year 2000, economies, especially those of the Western Balkans, have experienced a period of slight recovery except for Slovenia [30]. Economic growth was relatively significant in comparison with the previous decade, with an average of about 4 percent per year from 2000 to 2006. The average real GDP growth rose to 6 percent in 2007, before returning to about 4.5 percent in 2008. Nevertheless, despite this temporary economic growth, the region of Southeast Europe still includes some of the poorest countries in Europe. In 2006, Bosnia and Herzegovina had the lowest income per capita, while in Albania, Macedonia, Montenegro and Serbia it was slightly better. Croatia was better positioned, with more than three times higher income per capita in comparison with Bosnia and Herzegovina [6, p. 23]. Although there are also new EU member states among them, along with formerly associated Greece, due to great difficulties in linking with the global economy, they are still considered to be the outskirts of Europe in relation to the countries of Western Europe.

This paper aims to examine the causal relationship between institutional quality measures and GDP growth

in the SEE countries. The research was conducted using the real gross domestic product as the dependent variable, and government effectiveness, control of corruption, political stability, and the rule of law as independent variables. This paper lies in the hypothesis that there is a causal relationship between institutional quality and gross domestic product growth in SEE countries. The causal relationship between selected variables is investigated using the Dumitrescu-Hurlin non-causality approach for the period from 1996 to 2016. Although there are economic studies that explore the causal link between institutional variables and economic growth for different countries of the world, studies of this type of causality for the countries of South-Eastern Europe are very rare and are reduced to examining a smaller number of institutional variables. The contribution of this paper is the research of causality between examined variables (four institutional variables and GDP) in SEE countries. In general, our research shows some empirical evidence that stronger institutional measures cause higher economic growth.

Apart from the introductory (first) section, the paper consists of four parts. A literature overview is presented in the second section. The third section explains our research methodology. The fourth section contains results and discussions. The conclusion is presented in the fifth section.

Literature Review

Many previous economic studies have examined the relationship between political stability, corruption, government effectiveness, and other institutional variables and economic growth. Relying on this kind of general research, we decided to present some empirical evidence on the factors that influence the economic growth of the countries of South East Europe in the given period.

Aixalá and Fabro [2] tested institutional variables looking to find out which one is the most appropriate in the growth model, depending on the income levels of countries. Their results show that for the rich countries, the rule of law is fundamental, while for the poor, it is the control of corruption. Chong and Calderon [11] examined the causal link between institutional measures and economic growth. It turned out that the poorer the country the longer it awaits the improvement of institutional measures, thus strengthening the impact of these measures on economic growth. However, they also point to the existence of reverse causality, or to the fact that economic growth affects the increase in the quality of institutional measures. Similarly, Glaeser et al. [33] empirically test the causal link between the quality of institutions and economic growth. They find that human capital is a more fundamental source of growth than institutions. They also claim that poorer countries get out of poverty due to good policies, which subsequently increases the quality of their political institutions. In their empirical analysis Knack and Keefer [44] conclude that different institutional measures, such as increasing the efficiency of bureaucracy, property rights and political stability of the country, have a positive statistically significant relation to the economic performance of the country. The authors who investigated the relationship between institutional factors and economic growth are Aparicio et al. [4], Young and Sheehan [58], Lee et al. [45]. Esfahani and Ramírez [28] develop a structural model that includes institutional and economic factors that mediate in the infrastructure-GDP interactions. The results show that institutional measures that give credibility and effectiveness to government policy play a particularly important role in the process of economic growth through investment in infrastructure. The effects of this model indicate that countries can achieve much in improving investment and performance in infrastructure, but that requires institutional and organizational reforms that are more important than the simple design of infrastructure projects. Evans and Rauch [29] emphasize the importance of a good bureaucracy for the country's economic growth and suggest that policymakers should pay great attention to building better bureaucracies. They claim that further research in social sciences is needed on variations in how to organize state bureaucracy. Yanovskiy and Shulgin [57] found significant positive interdependencies between democracy indicators and economic growth. Efendic and Pugh [26] utilized dynamic panel analysis to investigate the relationship between institutional improvement and economic performance in 29 transition countries in the period 1992–2007. They found that per capita GDP is determined by the entire history of institutional reform

under transition. Thus, there exist institutional effects on economic performance in transition countries.

Political corruption in transition countries was examined by Goel and Budak [34]. Their results indicate that greater economic prosperity of the country certainly reduces corruption. These authors suggest that transitional countries need to undertake comprehensive reforms to reduce corruption. Budak and Rajh [9] find that high levels of corruption in the Western Balkan represent a serious obstacle to a successful business and conclude that the more visible corruption it is more connected with the state institutions and the government by the business community. For Mauro [48; 49], corruption has significant, detrimental effects on economic growth, which opens the issue of individual countries that, despite this, do not work to eradicate corruption and improve the performance of their institutions. As one of the possible reasons, Mauro [49] suggests the fact that individuals in cases where corruption is widespread do not have incentives, or institutional support to fight against it. In support of his claims, he gives the example of two illustrative models. Podobnik et al. [53] analyse the dependence of the Gross Domestic Product (GDP) per capita growth rates on the changes in the Corruption Perceptions Index (CPI) in the period 1999-2004 for all countries in the world. These authors find that, on average, the increase in CPI for those units leads to an increase in the annual growth rate of GDP per capita of 1.7%. However, once the transition countries in Europe have set aside, the authors have concluded that an increase in the CPI for those units generates an increase in the annual GDP growth rate per capita by as much as 2.4%. At the same time, they analysed the relationship between foreign direct investment and CPI and concluded that the decrease in corruption leads to a significant increase in the country's wealth.

The authors who examined the link between corruption and economic growth are Cieślik and Goczek [12], d'Agostino et al. [14], Huang [37], Dzhumashev [21]. Ehrlich and Lui [27] analysed the impact of bureaucratic corruption on economic growth at various stages of economic development and under various political and economic regimes. Mo [50] calculates quantitatively the impact of corruption on economic growth and finds that increasing corruption by 1% reduces the rate of growth by 0.72%. This author particularly points out that political instability is an important channel through which corruption affects economic growth. Drury et al. [19] also empirically test the impact of corruption on economic growth. These authors use time series for more than 100 countries between 1982 and 1997 and show that in democratic countries, corruption does not have a significant effect on economic growth, which is not the case with non-democratic countries. In contrast, corruption has a significant impact on economic growth. Svensson [56] reveals a negative relation between the level of corruption and country wealth factors, such as GDP, leading to a conclusion that the higher level of corruption causes a higher level of poverty. Dridi [18] examines the impact of corruption on various economic growth variables such as GDP per capita, political instability and some dummy variables. This author finds that there is a negative effect of corruption on economic growth and that it comes from the impact of human capital and political instability. Gyimah-Brempong [36] uses panel data for African countries to explore the impact of corruption on economic growth and distribution of income. The author uses a dynamic panel estimator and finds that corruption reduces the rate of economic growth and income per capita. His results show that increased corruption is positively correlated with inequality of income, which means that corruption more affects poorer African countries than the rich ones. De Vaal and Ebben [17] emphasize the overall effect of corruption on economic growth is highly dependent on the institutional setting of a country. Especially in situations where institutions are not well-developed corruption can be conducive to economic growth. Therefore, they emphasize the importance of taking into account the complete institutional setting in the study of corruption, both theoretical and empirical. Lučić et al. [47] analyse the impact of corruption (measured by Corruption Perceptions Index) on economic development (measured by GDP per year) of each country. These authors have shown that the change in GDP has been postponed for 6 to 10 years after the change in the level of corruption, and vice versa, i.e. the strongest causality between these two variables is noticed in the so-called medium-term framework.

Concerning political freedoms and economic growth, Przeworski and Limongi [54] conclude that political institutions are important for economic growth. Barro [5], using data for 100 countries between 1960 and 1990, conducted a panel analysis that led to the conclusion that political freedoms have a weak effect on economic growth, but that there are some indications for the non-linear relationship between these variables. He believes that when political rights are low, their expansion stimulates economic growth, but where there is already a moderate level of democracy, further expansion of these rights reduces economic growth. Begović et al. [7] showed that there is some empirical evidence that an increase in democracy boosts the development of financial intermediation and then such improved financial intermediation supports economic growth. Huang [38] shows that improved institutional quality is associated with increases in financial development at least in the short run. For the lower-income countries, this effect is expected to persist over longer horizons. Alesina et al. [3] studied the relationship between political instability and economic growth, that is, GDP growth per capita for 113 countries in the period 1950-1982. Their main finding is that in countries and periods with a high incidence of government collapse, growth is significantly lower than otherwise.

Research Methodology

Data Analysis

This study aims to examine the relationship between the growth of the real gross domestic product, government effectiveness, control of corruption, political stability and the rule of law in the South East European countries. Data for growth of GDP are collected from World Development Indicators (WDI), while data for government effectiveness, control of corruption, political stability, and the rule of law are collected from World Governance Indicators (WGI) of the World Bank database. Kaufmann et al. [41, 42] explain these institutional quality measures in detail. These indicators are measured in units that range from -2.5 (weak) to 2.5 (strong), and they describe the following [2]:

- Government Effectiveness (GE) combines perceptions of the quality of public service provision and administration, the independence of the civil service from political pressure, and the credibility of the government's commitments.
- Control of Corruption (CC) measures perceptions of the exercise of public power for private gain.
- Political Stability (PS) measures perceptions of the likelihood that the government will be destabilised by unconstitutional means.
- Rule of Law (RL) measures the extent to which agents have confidence in and abide by the rules of society. These include perceptions of the incidence of both violent and non-violent crime, the effectiveness and predictability of the judiciary, and the enforceability of contracts [2].

Table 1 presents descriptive statistics of selected independent variables in the model for each country, respectively. From the data presented in Table 1, it can be seen that Slovenia, according to all parameters, is superior to other SEE countries. Namely, Slovenia has the best government effectiveness, control of corruption, the highest political stability and the best rule of law. Also, the standard deviation of these variables is quite low for Slovenia.

Bosnia and Herzegovina has the worst government effectiveness, while Albania has the worst control of corruption. Report of European Commission [23] notices that "Bosnia and Herzegovina is at an early stage in the area of the judiciary. The constitutional and legal framework governing the judiciary is incomplete and does not provide sufficient guarantees of independence, accountability, and efficiency." Report of European Commission for Albania states that corruption prevails in many areas of Albania and remains an issue of importance [22]. Turkey has the weakest political stability (this is in line with [24]), while Serbia and Albania have the worst rule of law compared to all SEE countries. Standard deviations for all variables for Serbia are quite high compared to standard deviations for other countries, especially for Slovenia. Petrović et al. [52] empirically showed that Serbia's economic growth laggard due to deficient institutions, specifically lacking the rule of law and control of corruption. However, looking at the summary for all SEE countries, it can be said that the whole SEE territory suffers from very poor control of

Table 1: Descriptive statistics of selected independent variables

	Government Effectiveness		Control of Corruption		Political Stability		Rule of Law	
1996-2016	mean	st.dev.	mean	st.dev.	mean	st.dev.	mean	st.dev.
Albania	-0.38	0.22	-0.70	0.17	-0.18	0.30	-0.60	0.19
B&H	-0.71	0.21	-0.35	0.08	-0.46	0.22	-0.41	0.17
Bulgaria	0.09	0.12	-0.17	0.12	0.25	0.18	-0.11	0.07
Croatia	0.48	0.18	0.04	0.25	0.52	0.20	0.07	0.25
Greece	0.58	0.19	0.20	0.29	0.25	0.40	0.68	0.25
North Macedonia	-0.21	0.26	-0.33	0.24	-0.56	0.32	-0.33	0.14
Montenegro	0.08	0.15	-0.19	0.22	0.41	0.27	-0.05	0.25
Romania	-0.26	0.13	-0.26	0.16	0.21	0.21	-0.02	0.15
Serbia	-0.29	0.34	-0.50	0.34	-0.55	0.58	-0.60	0.39
Slovenia	0.98	0.11	0.93	0.14	1.05	0.14	1.01	0.08
Turkey	0.17	0.18	-0.08	0.18	-1.03	0.34	0.03	0.10
SEE countries	0.04	0.14	-0.07	0.07	-0.03	0.09	-0.03	0.10

Source: Authors' calculation based on WGI data.
Notes: B&H – Bosnia and Herzegovina.

corruption, significant political instability, the weak rule of law and poor government effectiveness.

The Model

An unbalanced panel data from 1996 to 2016 is used in this study. The model is specified as follows:

$$GDP_{it} = \alpha + \beta_1 GE_{it} + \beta_2 CC_{it} + \beta_3 PS_{it} + \beta_4 RL_{it} + \varepsilon_{it} \quad (1)$$

The dependent variable is the growth of real $GDP_{i,t}$, and regressors are $GE_{i,t}$, $CC_{i,t}$, $PS_{i,t}$, and $RL_{i,t}$. α is the intercept, and β_1, β_2, β_3, β_4 are the slope coefficients of the models, *i* represents the country, *t* is the time, and $\varepsilon_{i,t}$ is the error term, independently and identically normally distributed with zero mean, i.e. $\varepsilon_{i,t} \sim N(0,\sigma^2)$.

The test of cross-sectional dependence

De Hoyos and Sarafidis [16] consider "the standard panel-data model as:

$$y_{i,t} = \alpha_i + \beta' x_{i,t} + u_{i,t}, \; i=1,\ldots,N \text{ and } t=1,\ldots,T \quad (2)$$

where $x_{i,t}$ is a $K\times1$ vector of regressors, β is a $K\times1$ vector of parameters to be estimated, and α_i represents time-invariant individual nuisance parameters". The null hypothesis assumed that $u_{i,t}$ is independent and identically distributed over periods and across cross-sectional units. The alternative hypothesis supposed that $u_{i,t}$ could be correlated across cross-sections, while there is the assumption of no serial correlation [16]. De Hoyos and Sarafidis [16] explain that Breusch and Pagan [8] proposed an LM statistic:

$$LM = T \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} \hat{\rho}^2_{ij} \quad (3)$$

which is valid for fixed *N* as T→∞. In equation (3) $\hat{\rho}^2_{ij}$ is the sample estimate of the pairwise correlation of the residuals and $\hat{u}_{i,t}$ is the estimate of $u_{i,t}$ in equation (2).

$$\hat{\rho}_{ij} = \hat{\rho}_{ji} = \frac{\sum_{t=1}^{T} \hat{u}_{it}\hat{u}_{jt}}{\left(\sum_{t=1}^{T} \hat{u}_{it}^2\right)^{1/2} \left(\sum_{t=1}^{T} \hat{u}_{jt}^2\right)^{1/2}} \quad (4)$$

Under the null hypothesis, LM statistic is asymptotically distributed as χ^2 with $N(N\text{-}1)/2$ degrees of freedom [16].

The second generation panel unit root test

Breusch-Pagan LM test shows cross-section dependence in our panel data model, and then we applied second generation unit root test to examine stationarity of the used data. Hurlin and Mignon [39] notice that the second generation unit root tests are robust to the cross-sectional dependence. We used Pesaran [51] test that is explained by Hurlin and Mignon [39]. They highlight that Pesaran suggests various models to explain the cross-sectional dependencies problem, and a one-factor model with heterogeneous loading factors for residuals is one of them. Hurlin and Mignon [39] describe that Pesaran augments the standard Dickey-Fuller (ADF) regressions with the cross-section average of lagged levels and first-differences of the individual series.

Pesaran's cross-sectional augmented Dickey-Fuller (ADF) regression (CADF) is specified as follows:

$$\Delta y_{i,t} = a_i + b_i y_{i,t-1} + c_i \bar{y}_{t-1} + d_i \Delta \bar{y}_t + e_{i,t}. \quad (5)$$

Where: $\overline{y}_{t-1} = \frac{1}{N}\sum_{i=1}^{N} y_{i,t-1}$; $\Delta\overline{y}_t = \frac{1}{N}\sum_{i=1}^{N} \Delta y_{i,t}$; $t_i(N,T)$ is the t-statistic of the OLS estimate of b_i [39]. The null hypothesis of panel unit root tests is that variables contain panel unit root, while the alternative hypothesis is that the individual panel series is stationary.

The Dumitrescu-Hurlin panel Granger non-causality test

The Dumitrescu-Hurlin panel Granger non-causality test is used to examine the causal relationships among the growth of GDP, government effectiveness, control of corruption, political stability, and the rule of law.

Dumitrescu and Hurlin [20] provide a simple Granger[1] [35] non-causality test for heterogenous panel data models. The two stationary variables observations for individual i in period t are presented by x_{it} and y_{it} [46]. Dumitrescu and Hurlin [20] defined the linear model:

$$y_{i,t} = \alpha_i + \sum_{k=1}^{K} \gamma_{i,k}\, y_{i,t-k} + \sum_{k=1}^{K} \beta_{i,k}\, x_{i,t-k} + \varepsilon_{i,t} \qquad (6)$$

where i=1,…, N, at time t=1,…, T, with $K \in \mathrm{N}^*$. The model in equation (6) allows investigating Granger causality in a panel data context [20]. It is assumed that coefficients are time-invariant and differ across individuals. The null hypothesis is:

$$H_0 : \beta_{i1} = \cdots = \beta_{iK} = 0 \qquad \forall i = 1,\ldots,N \qquad (7)$$

that means there is no causality for all individuals in the panel [46].

Dumitrescu and Hurlin [20] define the alternative hypothesis as:

$$\begin{aligned} H_1 &: \beta_i = 0 \qquad \forall i = 1,\ldots,N_1 \\ &\beta_i \neq 0 \qquad \forall \mathrm{i} = N_1 + 1, N_1 + 2\ldots,N \end{aligned} \qquad (8)$$

Where N_1 is unknown and the condition $0 \leq N_1/N < 1$ is fulfilled. It is necessary that the ratio is less than one. There is no causality for any of the individuals in the panel if $N_1 = N$ which is according to the homogenous non causality null hypothesis. In case $N_1 = 0$, causality for all the individuals in the panel exists [20].

1 Granger [35] test developed a methodology for analysing the causal relationships between time series [46].

Results and Discussion

Before testing of stationarity of variables, Breusch-Pagan LM test of independence is applied. We used Breusch-Pagan LM test because the time dimension is longer than the number of countries in our sample (T>N). Result of this test is: $\chi^2 = 256.547$ with $p = 0.000$. So, we strongly reject the null hypothesis of no cross-sectional dependence, and the analyzed variables are crosssectionally dependent. Thus, we have used second generation unit root test for lag=0, according to different criteria (the Akaike, the Schwarz, the Hannan-Quinn information criterion, etc.). The criteria for lag selection are presented in appendix A in Table A1.

The order of integration for each series (i.e. variable in the model) is determined. Namely, Pesaran's CADF panel unit root test was used, and the results are presented in Table 2. The results of this test showed that variables growth of real GDP and the rule of law are stationary at level, otherwise control of corruption and political stability are nonstationary at level. Government effectiveness variable is stationary at level only using Pesaran's CADF test with constant. All five variables are stationary at the first differences.

Table 2. The second generation unit root test results

Variables	Level		First Difference	
	Constant	Constant & Trend	Constant	Constant & Trend
Pesaran's CADF test				
gGDP	-5.131 (0.000)	-4.640 (0.000)	-12.031 (0.000)	-10.812 (0.000)
GE	-2.065 (0.019)	-1.085 (0.139)	-7.441 (0.000)	-5.840 (0.000)
CC	1.203 (0.886)	1.791 (0.963)	-4.631 (0.000)	-4.659 (0.000)
PS	-0.822 (0.206)	-0.149 (0.441)	-5.141 (0.000)	-3.717 (0.000)
RL	-1.903 (0.029)	-2.313 (0.010)	-6.630 (0.000)	-4.832 (0.000)

Source: Authors' calculation

Note: gGDP is real GDP growth, GE is government effectiveness, CC is control of corruption, PS is political stability, and RL is rule of law; p-values are presented in the parentheses; Pesaran's CADF test is calculated for lag=0 based on different criterion.

The results of the first generation unit root test (the Levin, Lin and Chu, the Im-Pesaran-Shin (IPS), ADF-Fisher, and PP-Fisher panel unit root tests) are presented in the appendix A in Table A2. According to the first

generation unit root tests, we can conclude that variable control of corruption is stationary at level, while real GDP growth is stationary at level, except when the Levin, Lin and Chu test with intercept and trend is used. Political stability variable is stationary at level, observing four unit root tests first generation with intercept. This variable is stationary using the Levin, Lin and Chu and PP-Fisher tests with intercept and trend, but it is nonstationary applying the Im-Pesaran-Shin and ADF-Fisher tests with intercept and trend. Government effectiveness and rule of law variables are stationary using all tests with intercept and trend. These variables are nonstationary in applied tests with intercept, except government effectiveness that is stationary according to the Levin, Lin and Chu test. All analysed variables are stationary at the first differences applying the first generation unit root tests.

Comparing the results of the first and second generation unit root tests, we can observe that the variable growth of real GDP is stationary i.e. I(0). The variable rule of law is stationary, applying the second generation unit root test and the first generation unit root tests with intercept and trend. Conclusions about the stationarity of control of corruption, government effectiveness, and political stability vary depending on the generation of the test. When we use the second generation unit root test, control of corruption and political stability are integrated of order one i.e. I(1), while these variables are stationary at level i.e. I(0) according to the first generation unit root tests. The government effectiveness variable is stationary at level, applying the second generation unit root test with constant. Opposite, this variable is stationary at level according to the first generation unit root tests with intercept and trend.

After obtaining stationary variables, testing for Granger non-causality in heterogeneous panels was applied i.e. the Dumitrescu Hurlin test, also taking into account cross-section dependence by bootstrapping procedure. The Dumitrescu Hurlin test was estimated to examine the causal relationship among the first differences of selected variables (real GDP growth, government effectiveness, control of corruption, political stability, and rule of law). Results of the Dumitrescu Hurlin test are presented in Table 3.

Results from Table 3 show that in six cases, the null hypothesis about homogeneous non-causality can be rejected. There is Granger unidirectional causality between the first differences of political stability and real GDP growth at the 5 percent level in the SEE countries, namely political stability homogeneously causes real GDP growth. The control of corruption homogeneously causes

Table 3. Pairwise Dumitrescu Hurlin Panel Causality Tests

Null Hypothesis:	W-Stat.	Zbar-Stat.	Prob.	Direction
ΔCC does not homogeneously cause ΔgGDP	0.625	-0.957	0.339	No causality between ΔCC and ΔgGDP
ΔgGDP does not homogeneously cause ΔCC	0.871	-0.581	0.561	
ΔGE does not homogeneously cause ΔgGDP	0.651	-0.910	0.363	No causality between ΔGE and ΔgGDP
ΔgGDP does not homogeneously cause ΔGE	1.353	0.132	0.895	
ΔPS does not homogeneously cause ΔgGDP	2.717	2.084	0.037	Unidirectional causality from ΔPS to ΔgGDP
ΔgGDP does not homogeneously cause ΔPS	1.318	0.066	0.947	
ΔRL does not homogeneously cause ΔgGDP	1.391	0.216	0.829	No causality between ΔRL and ΔgGDP
ΔgGDP does not homogeneously cause ΔRL	0.374	-1.342	0.179	
ΔGE does not homogeneously cause ΔCC	1.728	0.691	0.490	Unidirectional causality from ΔCC to ΔGE
ΔCC does not homogeneously cause ΔGE	2.504	1.844	0.065	
ΔPS does not homogeneously cause ΔCC	2.191	1.325	0.185	No causality between ΔPS and ΔCC
ΔCC does not homogeneously cause ΔPS	1.261	-0.017	0.987	
ΔRL does not homogeneously cause ΔCC	3.148	2.908	0.004	Unidirectional causality from ΔRL to ΔCC
ΔCC does not homogeneously cause ΔRL	0.974	-0.422	0.673	
ΔPS does not homogeneously cause ΔGE	1.863	0.851	0.395	Unidirectional causality from ΔGE to ΔPS
ΔGE does not homogeneously cause ΔPS	2.859	2.289	0.022	
ΔRL does not homogeneously cause ΔGE	1.142	-0.181	0.857	No causality between ΔRL and ΔGE
ΔGE does not homogeneously cause ΔRL	0.913	-0.521	0.602	
ΔRL does not homogeneously cause ΔPS	2.841	2.263	0.024	Bidirectional causality between ΔRL and ΔPS
ΔPS does not homogeneously cause ΔRL	2.853	2.280	0.023	

Source: Authors' calculation

Note: gGDP is real GDP growth, GE is government effectiveness, CC is control of corruption, PS is political stability, and RL is rule of law, Δ is the first difference operator.

government effectiveness at the 10 percent level, which means there is Granger causality between the first differences of control of corruption and government effectiveness. The Granger causality between the first differences of rule of law and control of corruption is observed at the 1 percent level because rule of law homogeneously causes control of corruption. At the 5 percent level, there is Granger homogeneous causality between the first differences of government effectiveness and political stability. Bidirectional homogeneous causality is noticed between the first differences of rule of law and political stability at the 5 percent level.

Therefore, the results of this paper showed that there is some empirical evidence to support the paper hypothesis that there is a causal relationship between some institutional quality measures and gross domestic product growth in SEE countries. Our results show that some institutional quality measures cause economic growth, which partially coincides with research by Chong and Calderon [11], and Petrović et al. [52].

Acemoglu et al. [1] conclude that the cause of slow economic growth in some countries can be found in institutions, while macroeconomic policies that do not lead to growth are their consequence. The poor institutions' quality, which includes the lack of rule of law, the prevalence of corruption and the high degree of political instability, causes misguided and inadequate macroeconomic policies [10].

Cvetanović et al. [13] pointed out that „institutions play an important role in increasing the functionality of society, and in particular, in increasing economic efficiency. They must provide predictable and coherent rules, but in spite of this, institutional changes and adjustments to social preferences, technology, political and socioeconomic structures and external factors are necessary. The essence of the existence of quality institutions is that, by creating rules of the game in the economic and political sphere, adequate incentives influence the behavior of economic entities towards improving the quality of key macroeconomic performances".

Strong institutions influence high levels of income per capita, as they shape the conditions for investment, technological progress, and growth [10]. A stable and efficient legislative and legal system is of primary importance for the process of economic growth. In areas where corruption and incomplete protection of property rights are evident, low investment returns become available or they are not present at all, and this logically affects the slowdown in economic growth [13].

Conclusions

This paper examines the relationship between the growth of the real gross domestic product, government effectiveness, control of corruption, political stability and the rule of law in the South East European countries in the period 1996-2016. To achieve the aim of this paper, the panel framework is used. The Dumitrescu-Hurlin panel Granger non-causality test is also employed to examine the causal relationship between the selected variables. Analysing descriptive statistics of our data, according to all variables Slovenia predominates to other SEE countries and the volatility of these variables is fairly low compared to other countries in the region. Slovenia is the best example of a country where improvement in the quality of institutional factors led to economic growth. Although it represented the country in transition in 1996, Slovenia managed to achieve better results in controlling corruption, government effectiveness and the quality of the rule of law in comparison with the countries that did not go through such economic turbulences, such as Greece and Turkey. Croatia is second to Slovenia when it comes to political stability. However, the parameter shows a great difference in mean value (Slovenia 1.05, Croatia 0.52). While Bosnia and Herzegovina has the poorest government effectiveness, Albania is the worst ranked regarding the control of corruption. According to the results obtained, it turned out that Turkey has the weakest political stability, while Serbia has the poorest rule of law compared to all SEE countries. However, observing all SEE countries it can be said that the entire SEE region (except for Slovenia) suffers from very poor control of corruption, followed by significant political instability, the weak rule of law and poor government effectiveness. There is a unidirectional homogeneous causality between some observed variables. It can be concluded that political

stability causes real GDP growth. In addition, it has been found that control of corruption causes government effectiveness; rule of law causes control of corruption, and government effectiveness causes political stability. There is only bidirectional homogeneous causality between the rule of law and political stability. Thus, some institutional quality measures cause economic growth in SEE countries that is unequivocally indicated by the latest reports of the European Union and the assessment of the state of democracy in the region of various monitoring organizations such as Freedom House [31], the International Institute for Democracy and Electoral Assistance [40] and the Economist [25]. Political interference and pressure, the deterioration of independent institutions and the strengthening of the executive power affect the rule of law in most South East European countries. This is a long-lasting problem, but nowadays it is indicated that these trends are on the rise. However, it is notable that political elites do not show commitment to changing the situation. Being accustomed to solving economic problems in the short term through various types of international assistance, these elites do not show interest in improving institutional measures for the purpose of economic and political progress. Therefore, important further research can be directed towards exploring the causal relationship between institutional measures and the inflow of foreign direct investment in the SEE countries.

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References

1. Acemoglu, D., Johnson, S., Robinson, J. (2005). The Rise of Europe: Atlantic Trade, Institutional Change and Economic Growth. *The American Economic Review*, 95(3), 549-575.
2. Aixalá, J., Fabro, G. (2008). Does the impact of institutional quality on economic growth depend on initial income level?. *Economic Affairs*, 28(3), 45-49. https://doi.org/10.1111/j.1468-0270.2008.00844.x
3. Alesina, A., Ozler, S., Roubini, N., Swagel, P. (1996). Political instability and economic growth. *Journal of Economic Growth*, 1(2), 189-211. https://doi:10.1007/BF00138862
4. Aparicio, S., Urbano, D., Audretsch, D. (2016). Institutional factors, opportunity entrepreneurship and economic growth: Panel data evidence. *Technological Forecasting and Social Change*, *102*, 45-61. https://doi.org/10.1016/j.techfore.2015.04.006
5. Barro, R.J. (1996). *Determinants of economic growth: a cross-country empirical study* (No. w5698). Cambridge: National Bureau of Economic Research. Retrieved from: https://www.nber.org/papers/w5698.pdf (January 24, 2019).
6. Bartlett, W. (2009). Economic development in the European super-periphery: Evidence from the Western Balkans. *Economic Annals*, 54(181), 21-44. DOI:10.2298/EKA0981021B
7. Begović, B., Mladenović, Z., Popović, D. (2017). *Democracy, financial development, and economic growth: an empirical analysis* (No. 0317). CLDS Working Paper, WP. file:///C:/Users/Win10/Downloads/Democracy20financial20intermediation-20and20economic20growth20WP03171%20(1).pdf (accessed December 5, 2019).
8. Breusch, T. S., Pagan, A. R. (1980). The Lagrange multiplier test and its applications to model specification in econometrics. *The review of economic studies*, *47*(1), 239-253.
9. Budak, J., Rajh, E. (2013). Corruption as an obstacle for doing business in the Western Balkans: A business sector perspective. *International Small Business Journal*, 0(0), 1–18. https://doi.org/10.1177/0266242613498882
10. Buterin, V., Olgić Draženović, B., Jakovac, P. (2018). Institucije kao determinanta ekonomskog rasta–Primjer Hrvatske i odabranih članica EU-a. *Zbornik Veleučilišta u Rijeci*, *6*(1), 217-234.
11. Chong, A., Calderon, C. (2000). Causality and feedback between institutional measures and economic growth. *Economics & Politics*, 12(1), 69-81. https://doi.org/10.1111/1468-0343.00069
12. Cieślik, A., Goczek, Ł. (2018). Control of corruption, international investment, and economic growth–Evidence from panel data. *World Development*, *103*, 323-335. https://doi.org/10.1016/j.worlddev.2017.10.028
13. Cvetanović, S., Mitrović, U., Jurakić, M. (2019). Institutions as the driver of economic growth in classis, neoclasic and endogenous theory. *Economic Themes*, *57*(1), 111-125. DOI 10.2478/ethemes-2019-0007.
14. D'Agostino, G., Dunne, J. P., Pieroni, L. (2016). Government spending, corruption and economic growth. *World Development*, *84*, 190-205. https://doi.org/10.1016/j.worlddev.2016.03.011
15. Dawisha, K., Parrott, B. (Eds.). (1997). *Politics, power and the struggle for democracy in South-East Europe*, Vol. 2, Cambridge University Press.
16. De Hoyos, R. E., Sarafidis, V. (2006). Testing for cross-sectional dependence in panel-data models. *The Stata Journal*, *6*(4), 482-496.
17. De Vaal, A., Ebben, W. (2011). Institutions and the relation between corruption and economic growth. *Review of Development Economics*, 15(1), 108-123. https://doi.org/10.1111/j.1467-9361.2010.00596.x
18. Dridi, M. (2013). Corruption and Economic Growth: The Transmission Channels. *Journal of Business Studies Quarterly*, 4(4), 121-152.
19. Drury, A. C., Krieckhaus, J., Lusztig, M. (2006). Corruption, democracy, and economic growth. *International Political Science Review*, 27(2), 121-136. https://doi.org/10.1177/0192512106061423
20. Dumitrescu, E.-I., Hurlin, C. (2012). Testing for Granger non-causality in heterogeneous panels. *Economic Modelling*, 29(4):1450-1460. https://doi.org/10.1016/j.econmod.2012.02.014

21. Dzhumashev, R. (2014). Corruption and growth: The role of governance, public spending, and economic development. *Economic Modelling*, *37*, 202-215. https://doi.org/10.1016/j.econmod.2013.11.007
22. EC (2019a). European Commission. Albania 2019 Report. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Brussels, 29.5.2019. Retrieved from https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20190529-albania-report.pdf (accessed July 8, 2019).
23. EC (2019bh). European Commission. Analytical Report. Communication from the Commission to the European Parliament. Commission Opinion on Bosnia and Herzegovina's application for membership of the European Union. Brussels, 29.5.2019. Retrieved from https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20190529-bosnia-and-herzegovina-analytical-report.pdf (accessed July 8, 2019).
24. EC (2019t). European Commission. Turkey 2019 Report. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Brussels, 29.5.2019. Retrieved from https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20190529-turkey-report.pdf (accessed July 8, 2019).
25. Economist (2018). Democracy Index 2017. Retrieved from http://pages.eiu.com/rs/753-RIQ-438/images/Democracy_Index_2017.pdf (accessed January 21, 2019).
26. Efendic, A., Pugh, G. (2015). Institutional effects on economic performance in post-socialist transition: a dynamic panel analysis. *Acta Oeconomica*, 65(4), 503-523. https://doi.org/10.1556/032.65.2015.4.1
27. Ehrlich, I., Lui, F. T. (1999). Bureaucratic corruption and endogenous economic growth. *Journal of Political Economy*, 107(S6), S270-S293.
28. Esfahani, H.S., Ramírez, M.T. (2003). Institutions, infrastructure, and economic growth. *Journal of Development Economics*, 70(2), 443-477. https://doi.org/10.1016/S0304-3878(02)00105-0
29. Evans, P., Rauch, J. E. (1999). Bureaucracy and growth: A cross-national analysis of the effects of "Weberian" state structures on economic growth. *American sociological review*, 64(5), 748-765.
30. Ferfila, B., Phillips, P. A. (2010). *Slovenia's Transition: From Medieval Roots to the European Union*. Lexington Books.
31. Freedom House (2018). Nations in Transit 2018 Confronting Illiberalism. Retrieved from https://freedomhouse.org/report/nations-transit/nations-transit-2018 (December 22, 2018).
32. Gapinski, J. (1993). *The economic structure and failure of Jugoslavija*. London: Praeger.
33. Glaeser, E.L., La Porta, R., Lopez-de-Silanes, F., Shleifer, A. (2004). Do institutions cause growth?. *Journal of Economic Growth*, 9(3), 271-303. https://doi.org/10.1023/B:JOEG.0000038933.16398.ed
34. Goel, R.K. Budak, J. (2006). Corruption in transition economies: effects of government size, country size and economic reforms. *Journal of Economics and Finance*, 30(2), 240-250. https://doi.org/10.1007/BF02761489
35. Granger, C.W. (1969). Investigating causal relations by econometric models and cross-spectral methods. *Econometrica*, 37(3):424-438.
36. Gyimah-Brempong, K. (2002). Corruption, economic growth, and income inequality in Africa. *Economics of Governance*, 3(3), 183-209. https://doi.org/10.1007/s101010200045
37. Huang, C. J. (2016). Is corruption bad for economic growth? Evidence from Asia-Pacific countries. *The North American Journal of Economics and Finance*, *35*, 247-256. https://doi.org/10.1016/j.najef.2015.10.013
38. Huang, Y. (2010). Political institutions and financial development: an empirical study. *World Development*, *38*(12), 1667-1677. https://doi.org/10.1016/j.worlddev.2010.04.001
39. Hurlin, C., Mignon, V. (2007). Second generation panel unit root tests. https://halshs.archives-ouvertes.fr/halshs-00159842/document (accessed November 20, 2019).
40. International Institute for Democracy and Electoral Assistance (2018). Retrieved from https://www.idea.int/news-media/news/space-civil-society-really-shrinking (accessed December 22, 2018).
41. Kaufmann, D., Kraay, A., Mastruzzi, M. (2003). *Government matters III: governance indicators for 1996-2002*. (No. 3106). The World Bank.
42. Kaufmann, D., Kraay, A., Mastruzzi, M. (2007). Growth and governance: A reply, *Journal of politics*, 69(2), 555-562. https://doi.org/10.1111/j.1468-2508.2007.00550.x
43. Kenney, P. (2006). *The Burdens of Freedom: Eastern Europe since 1989*. Nova Scotia: Fernwood Publishing.
44. Knack, S., Keefer, P. (1995). Institutions and economic performance: cross country tests using alternative institutional measures, *Economics & Politics*, 7(3), 207-227. https://doi.org/10.1111/j.1468-0343.1995.tb00111.x
45. Lee, C. C., Chang, C. H., Arouri, M., Lee, C. C. (2016). Economic growth and insurance development: The role of institutional environments. *Economic Modelling*, *59*, 361-369. https://doi.org/10.1016/j.econmod.2016.08.010
46. Lopez, L., Weber, S. (2017). Testing for Granger causality in panel data. *The Stata Journal*, *17*(4), 972-984. https://doi.org/10.1177/1536867X1801700412
47. Lučić, D., Radišić, M., Dobromirov, D. (2016). Causality between corruption and the level of GDP, *Economic research-Ekonomska istraživanja*, 29(1), 360-379. https://doi.org/10.1080/1331677X.2016.1169701
48. Mauro, P. (1995). Corruption and growth, *The quarterly journal of economics*, 110(3), 681-712. https://doi.org/10.2307/2946696
49. Mauro, P. (2004). The persistence of corruption and slow economic growth. *IMF staff papers*, 51(1), 1-18.
50. Mo, P.H. (2001). Corruption and economic growth. *Journal of comparative economics*, 29(1), 66-79. https://doi.org/10.1006/jcec.2000.1703
51. Pesaran, M. H. (2007). A simple panel unit root test in the presence of cross-section dependence. *Journal of applied econometrics*, *22*(2), 265-312. https://doi.org/10.1002/jae.951
52. Petrović, P., Brčerević, D., Gligorić, M. (2019). Why is Serbia an economic growth underachiever?. *Ekonomika preduzeća*, *67*(1-2), 17-33. DOI: 10.5937/EKOPRE1808017P
53. Podobnik, B., Shao, J., Njavro, D., Ivanov, P.C., Stanley, H.E. (2008). Influence of corruption on economic growth rate and foreign investment. *The European Physical Journal B*, 63(4), 547-550. https://doi.org/10.1140/epjb/e2008-00210-2

54. Przeworski, A., Limongi, F. (1993). Political regimes and economic growth. *Journal of Economic Perspectives*, 7(3), 51-69. https://doi.org/10.1007/978-1-349-24076-0_1

55. Sokol, M. (2001). Central and Eastern Europe a decade after the fall of state-socialism: Regional dimensions of transition processes. *Regional Studies*, 35(7), 645-655. https://doi.org/10.1080/00343400120075911

56. Svensson, J. (2005). Eight Questions about Corruption. *Journal of Economic Perspectives*, 19(3), 19–42. https://doi.org/10.1257/089533005774357860

57. Yanovskiy, K., Shulgin, S. (2013). Institutions, democracy and growth in the very long run. *Acta Oeconomica*, 63(4), 493-510. https://doi.org/10.1556/AOecon.63.2013.4.5

58. Young, A. T., Sheehan, K. M. (2014). Foreign aid, institutional quality, and growth. *European Journal of Political Economy*, *36*, 195-208. https://doi.org/10.1016/j.ejpoleco.2014.08.003

Appendix A

Table A1. VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	103.3286	NA*	2.88e-08*	-3.171891*	-3.000348*	-3.104539*
1	119.0629	28.42310	3.90e-08	-2.872995	-1.843737	-2.468882
2	139.2837	33.26659	4.62e-08	-2.718830	-0.831856	-1.977956
3	161.8541	33.49147	5.21e-08	-2.640453	0.104236	-1.562819
4	184.2589	29.63218	6.13e-08	-2.556738	1.045667	-1.142343
5	207.9784	27.54530	7.33e-08	-2.515434	1.944687	-0.764278
6	236.5397	28.56130	8.12e-08	-2.630314	2.687522	-0.542398
7	264.5418	23.48558	1.03e-07	-2.727154	3.448397	-0.302477
8	294.6571	20.40068	1.45e-07	-2.892164	4.141103	-0.130726

Notes: * 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.

Table A2. Unit root test results – the first generation

Variables	Level		First Difference	
	Intercept	Intercept & Trend	Intercept	Intercept & Trend
Levin, Lin & Chu t*				
gGDP	-23.0518 (0.0000)	1.4286 (0.9234)	-15.6355 (0.0000)	-16.6926 (0.0000)
GE	-2.4369 (0.0074)	-2.0478 (0.0203)	-11.5249 (0.0000)	-12.2049 (0.0000)
CC	-2.2386 (0.0126)	-1.8653 (0.0311)	-6.7908 (0.0000)	-10.0667 (0.0000)
PS	-2.3437 (0.0095)	-2.2538 (0.0121)	-10.8871 (0.0000)	-8.4938 (0.0000)
RL	-1.2693 (0.1022)	-6.1782 (0.0000)	-11.5348 (0.0000)	-11.3709 (0.0000)
Im, Pesaran and Shin W-stat				
gGDP	-11.7333 (0.0000)	-4.0527 (0.0000)	-17.2838 (0.0000)	-17.0473 (0.0000)
GE	-1.2037 (0.1144)	-1.5042 (0.0663)	-9.3833 (0.0000)	-8.9899 (0.0000)
CC	-1.9003 (0.0287)	-1.4020 (0.0805)	-5.8929 (0.0000)	-6.1345 (0.0000)
PS	-1.7597 (0.0392)	-1.2411 (0.1073)	-8.7092 (0.0000)	-5.0506 (0.0000)
RL	-0.0705 (0.4719)	-4.6096 (0.0000)	-9.2853 (0.0000)	-7.3525 (0.0000)

Variables	Level		First Difference	
	Intercept	Intercept & Trend	Intercept	Intercept & Trend
ADF - Fisher Chi-square				
gGDP	326.533 (0.0000)	51.7944 (0.0003)	239.786 (0.0000)	181.657 (0.0000)
GE	28.5085 (0.1594)	37.8230 (0.0192)	116.719 (0.0000)	98.9094 (0.0000)
CC	36.1166 (0.0295)	38.9941 (0.0141)	76.6501 (0.0000)	73.8238 (0.0000)
PS	41.2757 (0.0076)	27.6793 (0.1866)	103.391 (0.0000)	71.6154 (0.0000)
RL	29.0772 (0.1427)	59.0478 (0.0000)	111.040 (0.0000)	84.5323 (0.0000)
PP - Fisher Chi-square				
gGDP	338.521 (0.0000)	317.599 (0.0000)	757.523 (0.0000)	210.826 (0.0000)
GE	28.3129 (0.1655)	49.6934 (0.0006)	153.628 (0.0000)	146.358 (0.0000)
CC	49.7797 (0.0006)	46.2106 (0.0019)	103.023 (0.0000)	99.3648 (0.0000)
PS	36.8411 (0.0246)	39.6717 (0.0118)	99.3588 (0.0000)	98.8527 (0.0000)
RL	28.1764 (0.1699)	62.0049 (0.0000)	141.353 (0.0000)	105.648 (0.0000)

Source: Authors' calculation

Note: Schwarz automatic selection of the lag length has been used for the unit root tests; probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality; p-values are presented in the parentheses.

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CHARACTERISTICS OF INTELLECTUAL CAPITAL, COMPETITIVENESS AND INDUSTRIAL POLICIES OF INNOVATION-INTENSIVE SECTORS IN SERBIA*

Karakteristike intelektualnog kapitala, konkurentnosti i industrijskih politika inovativno-intenzivnih sektora u Srbiji

Abstract

This paper explores the characteristics of intellectual capital, competitiveness and industrial policies of innovation-intensive sectors in Serbia. It consists of four parts. The first part presents the characteristics of intellectual capital as the basis of economic growth and competitiveness. The second part analyses the characteristics of national intellectual capital and competitiveness of individual countries in the global economy, while the third part of the paper discusses the competitiveness of the Serbian economy and gives recommendations for a new growth model. The fourth part of the paper is concerned with analysis of the characteristics of intellectual capital and industrial policies of innovation-intensive companies in Serbia, presenting also the results of the research study. The paper proposes that the new growth model of the domestic economy should be based on advanced industrial production and services with a high degree of added value, as well as the application of new economic policies, which should be based on a heterodox approach. It is also concluded that the level of development of intellectual capital of the analyzed companies is at a relatively high level, their structural capital is relatively developed, and the surveyed companies have an excellent reputation. Finally, it is concluded that further development of innovation-intensive sectors implies the application of appropriate industrial policies specific for containing the elements of both vertical and horizontal policies which should focus on encouraging development and innovation.

Keywords: *intellectual capital, national intellectual capital, competitiveness, innovation, industrial policies, innovation-intensive sectors.*

Sažetak

Predmet izučavanja ovog rada su karakteristike intelektualnog kapitala, konkurentnosti i industrijskih politika inovativno-intenzivnih sektora u Srbiji. Rad se sastoji od četiri dela. U prvom delu rada date su karakteristike intelektualnog kapitala kao osnove ekonomskog rasta i konkurentnosti. U drugom delu rada proučavaju se karakteristike nacionalnog intelektualnog kapitala i konkurentnosti pojedinih zemalja svetske privrede, dok se u trećem delu rada razmatra konkurentnost privrede Srbije i daju se preporuke za novi model rasta. Četvrti deo rada posvećen je analizi karakteristika intelektualnog kapitala i industrijskih politika inovativno-intenzivnih preduzeća u Srbiji i u njemu su prikazani rezultati izvršenog istraživanja. U radu se predlaže da novi model rasta domaće privrede bude baziran na naprednoj industrijskoj proizvodnji i uslugama sa visokim stepenom dodate vrednosti, kao i primena novih ekonomskih politika, koje treba da budu zasnovane na heterodoksnom pristupu. Takođe se zaključuje da je stepen razvijenosti intelektualnog kapitala analiziranih preduzeća na relativno visokom nivou, da je njihov strukturni kapital relativno razvijen, kao i da anketirana preduzeća imaju odličnu reputaciju. Na kraju rada zaključuje se da dalji razvoj inovativno-intenzivnih sektora podrazumeva primenu odgovarajućih industrijskih politika koje su specifične po tome što treba da sadrže elemente i vertikalnih i horizontalnih politika i koje posebno treba da se bave podsticanjem razvoja i inovacija.

Ključne reči: *intelektualni kapital, nacionalni intelektualni kapital, konkurentnost, inovativnost, industrijske politike, inovativno-intenzivni sektori.*

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Introduction

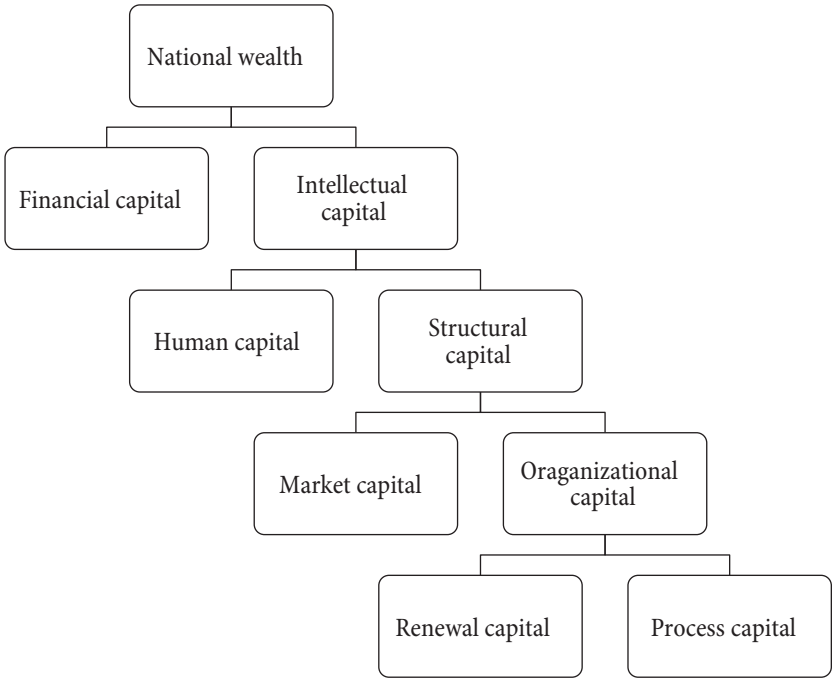
Intellectual capital is an intangible source of gaining wealth and the main competitive weapon. The influence of intellectual capital on economic development and business is very complex. Consequently, intellectual capital has made the 21st century the century of intellectual competition, and the post-industrial society has turned into a knowledge society. Intellectual capital, competitiveness and economic growth are intertwined processes. Therefore, when studying them, it is necessary to first consider the characteristics of intellectual capital, both at the level of a certain national economy and at the level of economic entities. As the level of intellectual capital development significantly influences the level of development and competitiveness of a certain national economy, special attention should be paid to this issue, especially since countries with a high level of intellectual capital development have a high level of competitiveness ranking in the global economy. Regarding the state and perspective of the domestic economy, intellectual capital plays a very important role and will continue in the future, both in the process of its development as well as in the process of improving its competitiveness. Innovation-intensive sectors will have a special significance for the development of the domestic economy. Therefore, appropriate industrial policies should be defined and directed towards more intensive development and encouragement of innovation.

Intellectual capital as the basis of economic growth and competitiveness

The Greek philosopher Heraclitus in the fifth century B.C. said "There is nothing permanent except change". A change is the most dominant feature of modern business and life in general. There are always new forms, intensities and speeds of changes. While in the First and Second Industrial Revolution human labor and capital played a key role in the development process, nowadays the key development factor is intellectual capital (IC). IC has made the 21st century the century of intellectual competition, and the post-industrial society has turned into a knowledge society [18].

IC has become an intangible source of gaining wealth and the main competitive weapon [29]. Nowadays, IC, based on the knowledge of managers and employees, has become the basis of competitiveness of both companies and national economies. IC has become the basis of

Figure 1: Schematic representation of national wealth and IC



Source: [3, p. 15].

competitiveness and value creation, as well as one of the most significant factors of increasing the value of all economic entities [18].

The characteristics of IC can be observed at the level of a certain national economy, i.e., national IC, and at the level of economic entities, i.e., IC of a company. National IC presents a set of all hidden values of individuals, companies, institutions, communities, and regions. In this way, IC is one of the most essential elements of national wealth of each country and it forms the basis of the current and future country's well-being [3, pp. 14-15]. National wealth can be represented by a map containing 2 areas which take part in the value creation process. These areas are: (1) financial capital and (2) IC, while the subareas of IC are human capital and structural capital. Afterwards, structural capital can be divided into market and organizational capital. Apart from financial capital, all other elements are the components of national IC [3, p. 15].

(1) The first element of national IC is financial capital. Most commonly, available national financial capital is measured with GDP per capita. However, when more countries are to be compared, GDP per capita in purchasing power parity should be used. In addition to GDP per capita, market capitalization of all the stock exchanges within a country is sometimes used to measure financial capital.

(2) The second area of national wealth is IC with its elements and sub elements. Human capital represents the most important element of IC and the intellectual treasure of the citizens of a country. Human capital implies knowledge, education and competencies of citizens aimed at achieving national goals. The knowledge is multi-layered and includes the knowledge of facts, laws, principles, as well as specialized knowledge, the ability to work in a team, and communication skills. The education system, the number of educated people and the quality of their education and to what extent they continue their education after graduating are all the factors that form national capital [3, p. 20].

Structural capital is the second sub element of IC and is divided into market and organizational capital. Market capital, as an IC element, is the ability of a country to provide attractive and competitive solutions that meet the needs of foreign and domestic clients. Market capital is developed by exporting high-quality products and services and investment in international relations [3, p. 23]. Organizational capital consists of two sub elements: renewal and process capital.

Renewal capital is a part of IC which represents potential future intellectual wealth of a nation. It includes the investment in development and the abilities that the nation possesses enabling it to retain its competitive edge in the future. Among the most important criteria of renewal capital are the level of investment in research and development, the number of patents, scientific papers and researchers (scientists) in the nation [3, pp. 24-25].

Process capital is the element of national wealth and national IC which presents the accumulated knowledge of a nation which is the part of technological, information and communication systems in the form of hardware, software, databases, laboratories, etc. [3, p. 21]. Some of the quantitative indicators of the presence of process capital in IC are the number of computers, telephone lines, radios, mobile phones, televisions, Internet users per capita (or per a certain number of citizens).

The state and perspectives of national IC can be considered from three points of view:

- Investments in national IC which include investments in research and development in the field of education at the national level.
- National IC components and their presence. According to [17, p. 350], national IC consists of four components: human capital, social capital, relational capital, and structural capital. Human capital entails knowledge, competences, wisdom and ethics possessed by the citizens of a country. Social capital implies the knowledge formed through social relations based on the exchange and combination of the existing knowledge. Relational capital involves relations and cooperation with other countries and reflects the relation between national and global IC. It shows how successfully a country uses the global IC to develop its national IC. Structural capital is IC embedded in national and technological structures. Those authors believe that renewal capital, mentioned in [3], is in all four components of the national IC and as such cannot be considered separately.

- National performances which include social indicators (employment rate, life expectancy, quality of life, Gini coefficient), economic performances (GDP per capita, productivity, household disposable income) and environmental performances (ecological footprint, biocapacity, total material requirement, etc.) [17, p. 353].

The study and definition of the content of the national IC and the way in which it is measured depends on the goals of a study, the perspective from which a society is viewed, and the availability of necessary data.

Globally, there are very few studies related to national IC. Some research studies have been conducted for Sweden [28], Israel [25], Finland [17], and Italy [4]. To the best of the authors' knowledge, no research studies related to national IC have been done for Serbia so far. Bontis [3] studied the national IC of ten Arab countries. For this purpose, he constructed the National Intellectual Capital Index (NICI). The index represents weighted average of four sub-indices for each of four components of national IC (human, process, market and renewal capital). Each sub-index is created by defining certain criteria and measures for each component of national IC.

National IC index was also used in one more research [22] to compare national IC of 40 countries. The criteria and measures used by the authors are not exactly the same as the ones used by [3]. The methodology for calculating the index is not precisely defined, and the choice of measures depends on personal opinion of a researcher and the availability of the data. The major downside of the index is that it does not provide the information on how to develop and enhance country's IC, since it only enables comparison and ranking of countries according to national IC level [17, p. 348].

On the other hand, the IC of an economic entity consists primarily of its employees with their knowledge, experience, skills and abilities, the organization of employees, as well as their ability to generate the value that a market will accept and valorize [18]. The level of development of company's IC also determines the level of its overall development and competitiveness, as well as the potential for gaining a competitive advantage [18]. In modern conditions, the influence of IC is significant in the process of creating the value of economic entities. Particularly important are the elements of IC that can be transformed into appropriate types of intellectual property which are the property of the company and remain permanently in it, and if commercialized, become a relatively long-term source of its income [13]. For the permanent development of company's IC, it is vital to adequately manage its resources. IC management in a company can be realized in three phases. In the first phase, a company manages its knowledge and other resources to expand or increase them. In the second phase, a company reaches certain new solutions in a form of product and process innovations, and the emphasis is placed on innovation management, their implementation, expansion, and development. In the third phase, IC management focuses on intellectual property management, maximizing the utility for a company and its stakeholders [1]. In order to be efficient, the development of company's IC needs to be continuous and long-term. Any discontinuity can result in lost revenue and opportunity costs in business activities [19].

National intellectual capital and competitiveness of the global economy

Modern conditions for business activities are characterized by strong competition in all spheres of business. Nowadays, one of the most important factors and elements of competitiveness is IC. This is evidenced by the fact that the majority of economically developed countries are also the countries with the highest competitiveness ranking. Since 1979, the World Economic Forum (WEF) started measuring the competitiveness of some national economies by ranking national economies according to the indicators. The Global Competitiveness Index 4.0 (GCI 4.0) monitors the performance of approximately 140 countries (141 countries in 2019) based on 103 indicators grouped in 12 pillars of competitiveness. Introduced for the first time in 2018, it emphasizes the role of human capital, innovation and agility as well as the role of the driver and key factor of success in the era of the Fourth Industrial Revolution. Based on the analysis of the competitive factors contained in 12 pillars, one can understand the idea of national IC,

investment level in IC and national performance of the countries for which the index is calculated.

According to the methodology, the pillars of competitiveness are grouped in four categories: enabling environment, human capital, markets, and innovation ecosystem. Enabling environment category contains the first four pillars: institutions, infrastructure, ICT adoption, and macroeconomic stability. Human capital category contains the following pillars: health system and skills. Markets category contains these pillars: product market, labor market, financial system, and market size. Finally, innovation ecosystem category contains the last two pillars: business dynamism and innovation capability.

The indices and the pillars of competitiveness can take the values from 0 to 100 and they are interpreted as "the results of progress", since they show how close a country is to the ideal state in which the index value equals 100. The index value represents the arithmetic mean of the values of 12 pillars, meaning that all the pillars have the same weights regardless of the fact which of the four categories they belong to.

According to the Global Competitiveness Index for 2019, it can be concluded that the most developed countries have the highest competitiveness ranking. The top five economies were Singapore, United States, Hong Kong, the Netherlands, and Switzerland. Although Singapore ranked first, its index value was less than 100 – 84.8/100, meaning that there was room for improvement even for the top-ranked country. Chad ranked last (35.1/100), and the average index value for 141 ranked countries amounted to 60.7. Serbia ranked 72nd with the index value of 60.9, therefore belonging to the group of average-ranked countries.

The competitiveness of a country is greatly influenced by the global business conditions. The last global financial crisis had a rather negative effect, aggravating the business conditions. After the global financial crisis of 2007-2008, there was a period of slow growth that has accelerated since 2012. In 2017, global GDP increased by about 3.3%, and in 2018 and 2019 the projected global GDP growth was almost 4% [32, p. 1]. Although the global economy is showing the signs of recovery, policymakers in many countries are concerned about the prospect of long-term economic development, believing that the ongoing growth is the result of the cycle, supported by low interest rates rather than fundamental drivers of structural growth. Achieving faster economic growth is nowadays hindered by numerous factors, the most important ones being (1) productivity slowdown, (2) challenges posed by innovation, (3) growth of inequality, and (4) decreased volume of international trade [31, pp. 2-5].

(1) Despite the expectations, significant technological advances did not lead to increased economic growth. On the contrary, there was productivity slowdown in both developed and developing countries, for which there are several explanations. The first explanation is that modern technologies do not have the same potential to advance productivity as the inventions in the past did. According to the second explanation, more time is needed for new technologies to affect productivity and to be recorded in countries' statistics. The third explanation is that the reallocation of resources to less productive sectors contributed to the fall in productivity, so policymakers needed to remove regulatory barriers that prevented structural adjustment. The fourth explanation is a long-term decline in knowledge level, especially among younger workers, in the countries where the slowing down of economic growth led to long-term unemployment and the fall in investments [31, p. 3].

When analyzing productivity data, it should be taken into account that the data are obtained on the basis of GDP data of countries, and, therefore, the level of productivity may be underestimated. The traditional way of measuring GDP does not include significant amount of the value created in recent years. For example, search engines, information on the Internet, or the value generated through social media are not evaluated based on the value provided to users, but based on the value generated for these companies by selling advertising space to other companies. Moreover, productivity data do not reflect the improvement of product quality resulting from technological advances as it is the case with smartphones. Finally, the participation of services in economy is increasing, but the value of services is more difficult to measure compared to the value of physical goods.

(2) Innovations have the potential to be a source of growth. There are challenges though. The biggest challenge is how to utilize the potential of innovation to benefit a society as a whole, bearing in mind that they can lead to redistribution of wealth and opportunities for people. In the years to come, it is expected that new technologies will change significantly the way we produce and provide services, which will bring about job losses. Although new jobs will certainly be created, it is uncertain when it will happen and whether their number will match the number of lost jobs.

The development of technology has led to the creation of asymmetrical political and economic environment. There is an increase in concentration in some market structures, which has an impact on productivity, growth, and inequality since economic concentration also enables the growth of political power and influence increasing the risk that economic policies would favor the companies that are well positioned in the industry.

(3) One of the impacts of the development of technology on the competition of legal entities is the fact that technology contributes to the polarization of labor market by increasing the number of low-skilled and highly-skilled jobs and reducing the number of medium-skilled jobs [6, p. 62]. Over the past decades, inequality has declined globally due to faster growth of poor and densely populated countries in Asia compared to developed countries. However, inequality within states increased. In developed countries inequality between rural and urban areas increased. It is not the case in developing countries, although the absolute level of inequality in them is much higher than in developed countries. The combination of decreasing growth and increasing inequality resulted in political discontent and the spread of tension worldwide, which could bring about political and economic problems [31, p. 4].

(4) The volume of international trade declined by about 15% in 2009 as the consequence of the economic crisis and it is still smaller today than it used to be before the global financial crisis. The volume of international trade after 2009 has been slower than the growth of global GDP. Due to the crisis there are new forms of protectionism in many countries, including the USA, based on laws, regulations, border controls, and other types of non-tariff protection measures.

One reason for the decline in international trade is the emergence of declining return on production relocation across different countries whose laws differ. The decline also happens due to the emergence of new technologies, such as 3D printing which can bring production closer to consumers. Another explanation for the decrease of international trade volume is the change of customer preferences, especially of the youth, which led to the fall in the demand for physical products manufactured abroad and, at the same time, increased the demand for local services [31, p. 5].

In practice, economic growth does not guarantee human development, and countries cannot improve the well-being of their citizens without first achieving economic growth. Therefore, economic growth should not be the ultimate goal, but it should help achieve well-being of people and economic progress which would lead to realizing certain values, such as equal distribution of economic benefits, environmental sustainability, and intergenerational equity for young people and future generations.

Competitiveness of the Serbian economy and recommendations for the new growth model

Serbia belongs to the group of European countries with rather low competitiveness ranking. In terms of competitiveness of national economies, European countries can be divided into four groups. The first group is made up of the most competitive northwest region, including Switzerland. The second group consists of a bit less competitive France-led southwest. The third group is made of the northeast region, led by Poland, the Czech Republic, and the Baltic countries. Some countries in this group are equally competitive or even more competitive than some Western European countries. The fourth group consists of the southeast region, including the Balkan countries, which lags behind the other groups [32, p. 17].

According to the report of the World Economic Forum for 2019 [33, p. 498], Serbia ranked 72nd out of 141 countries regarding Global Competitiveness Index.

The index value for Serbia was 60.9/100. Since the data on the competitiveness of countries have not been published for 2020, Table 1 shows how Serbia and the surrounding countries ranked in 2019.

Table 1: Ranking of Serbia and surrounding countries according to the Global Competitiveness Index (2019)

State	Global Competitiveness Index		Difference from the previous year	
	Rank	Value	Rank	Value
Slovenia	35	70.2	-	0.6
Hungary	47	65.1	1	0.8
Bulgaria	49	64.9	2	1.3
Romania	51	64.4	1	0.9
Croatia	63	61.9	5	1.8
Serbia	*72*	*60.9*	*-7*	-
Montenegro	73	60.8	-2	1.2
Albania	81	57.6	-5	-0.5
North Macedonia	82	57.3	2	0.7
Bosnia and Herzegovina	92	57.7	-1	0.6

Source: Adapted according to [33, p. xiii].

Table 2: Global Competitiveness Index and pillars of competitiveness for Serbia for 2019

	Rank	Value
Global Competitiveness Index	**72**	**60.9**
Favorable environment		
Pillar 1: Institutions	75	52.5
Pillar 2: Infrastructure	51	73.8
Pillar 3: ICT adoption	77	52.6
Pillar 4: Macroeconomic stability	64	75
Human capital		
Pillar 5: Health system	76	79
Pillar 6: Skills	55	68.2
Market		
Pillar 7: Product market	73	54.6
Pillar 8: Labor market	54	62.1
Pillar 9: Financial system	82	57.4
Pillar 10: Market size	74	51.8
Innovation ecosystem		
Pillar 11: Business dynamism	54	63.1
Pillar 12: Innovation capability	59	40.2

Source: Adapted according to [33, pp. 499-501].

According to the Global Competitiveness Index, Table 1 displays that Serbia is slightly better ranked compared to Montenegro, and significantly better compared to Albania, North Macedonia, and Bosnia and Herzegovina. Romania, Bulgaria, Hungary and Croatia, and especially Slovenia, are better ranked than Serbia. Although the index value for Serbia is unchanged, Serbia is ranked five places lower compared to the previous year. This indicates that Serbia did nothing in 2019 to improve its competitiveness, whereas some other countries, such as Croatia, were rather active in improving its competitiveness.

Rather low ranking of Serbia regarding the global competitiveness is due to its size, as well as its low GDP per capita. Serbia is a small country whose share in the global GDP PPP is only 0.09%. With the population of 7 million, its GDP per capita amounted to $7,243 in 2018. The average annual GDP growth rate in the period 2009-2019 was rather low and amounted to only 1.5%. As the consequence of the aforementioned factors, competitiveness ranking of Serbia is rather unfavorable. Table 2 illustrates the ranking of Serbia regarding 12 pillars of competitiveness.

Based on the analysis of the indicators shown in Table 2, according to all the pillars of competitiveness Serbia lags behind compared to the average of Europe and North America. The largest lagging of Serbia is in the pillars: financial system, health system, institutions, market size, and product market.

One of the reasons for low competitiveness ranking in Serbia is the current business conditions. The transition to capitalism, which has been going on in Serbia for 25 years, has led to a specific structure of companies classified as the so-called "partocratic sector", the quasi-market and market sectors [10, p. 3]. Partocratic sector dominates Serbia in terms of total assets and equity. The sector consists of public and state-owned enterprises and enterprises with mixed ownership structure. The quasi-market sector consists of privately-owned small and medium-sized enterprises whose major business partners are enterprises in partocratic sector. For the success of these enterprises, political connections are crucial. Finally, market sector consists of branches of multinational enterprises in the field of finance and real economy and large enterprises owned by local entrepreneurs. As for assets and equity, the sector is significantly smaller than the previous two. Out of the total assets of all enterprises in Serbia, about 20-25% enterprises are from the market sector, while their share in the total revenue of all enterprises amounts to approximately 30-35%.

One of the reasons for low competitiveness ranking of the Serbian economy is low investment of GDP in scientific

research. Unlike most developed countries which on average allocate between 3% and 4% of GDP for research and development, for decades Serbia has been spending less than 0.4% of GDP on these activities. In order to make progress in domestic technological development, it is vital to change the approach to financing scientific research not only at national economy level, but also at company level. Changing the approach implies that the investment in research and development should not be treated as an unwanted expense, but as a highly profitable investment in the future [20, p. 484].

The problem of Serbia is also a very unfavorable structure of entities engaged in research and development activities. Actually, 42.6% of organizations engaged in research and development activities in Serbia belong to higher education sector, 30.4% to non-financial sector, 25.3% to public sector and 1.7% to non-professional sector. Research and development activities in Serbia are mainly focused on basic research, yet without a proper link between science and industry. In developed countries, by contrast, most research and development activities have been transferred to large corporations. In the United States, 70% of research and development activities are performed in enterprises. At universities only 15% of research and development activities are performed, whereby half of the total number of scientists are employed or used to be employed in the economy [20, p. 484].

The link between practice on the one hand and science and research work on the other hand is the weakest link in the innovation chain of the domestic economy. Therefore, most of domestic economic entities tend to purchase ready-made tech-solutions. However, their purchase contributes to the achievement of development goals in the short run, but in the long run it leads to permanent technological dependence. Therefore, the most acceptable solution for majority of companies may be to combine purchased technology with their own solutions, further develop and adapt the purchased technology to their conditions and needs [20, p. 485].

The fact that the transition process is not yet complete is also one of the problems of the Serbian economy. Getting out of transition requires complex reforms involving three groups of activities [11, p. 20]. First, the past mistakes need to be corrected through structural reforms and fiscal consolidation. Afterwards, the new growth model needs to be applied along with new economic policies that comply with the paradigm shift in economic theory and new norms such as the Fourth Industrial Revolution. Finally, Serbia needs investment in new areas that are in line with mega trends.

The new growth model of the domestic economy should be based on advanced industrial production and high value-added services, and new economic policies according to heterodox approach. Heterodox approach calls for the harmonization of macroeconomic policies (monetary and fiscal), with industrial policies (horizontal and vertical). Horizontal industrial policies are targeted at the overall economy of a country, while vertical industrial policies are targeted at particular sectors. Free market, infrastructure (physical and digital) and technology are interconnected according to heterodox approach [12, p. 13].

The new growth model has three pillars [9, p. 342]. The first pillar consists of vertical industrial policies targeted at trade sectors. Trade sectors are the sectors where a country can have a comparative, competitive or sustainable competitive advantage. Comparative advantage is based on the possession of the factors of production such as natural resources, labor, financial capital, and location rent. Exchange sectors, the candidates for vertical industrial policies, in which Serbia can have comparative advantage are agriculture, energy sector, automotive industry, fashion industry, and waste management sector [9, p. 346].

High competitiveness ranking and competitive advantage of domestic companies could enable higher prices compared to competitors, conducting business at lower costs or both [23, p. 73]. Trade sectors, the candidates for vertical industrial policies, in which Serbia can have competitive advantage, are metal industry, transport and logistics, wood processing and furniture production [9, p. 346]. Unlike competitive advantage which is short-term, sustainable competitive advantage is a long-term advantage over competition based on innovation that others cannot copy. Trade sectors which are the candidates for vertical industrial policies in which Serbia can have a sustainable competitive advantage are ICT, organic food, and health tourism sectors [9, p. 346].

The second pillar of the new growth model includes horizontal industrial policies. They should be aimed at improving infrastructure, public procurement and education, assisting start-ups and the investment in science, research and development [9, p. 343]. Horizontal industrial policies can be divided in six blocks: (1) measures focused on knowledge enlargement, (2) policies providing better access to finance, (3) policies providing better regulatory framework, (4) policies providing better conditions for export, (5) policies focused on environmental protection and green energy and (6) policies enabling structural changes [30, p. 183].

The third pillar represents a restrictive macroeconomic policy including hard budget constraints, automatic stabilizers, and tax collection. ICT sector and sector of professional, scientific, and technical activities should be at the center of the new growth model based on advanced industrial production and high value-added services [9, p. 346].

The authors such as [16] and [8] investigated the impact of IC efficiency on financial performance of companies that operate within ICT sector in Serbia. The results obtained by [16] indicate that human capital and physical capital partially affect financial performance. On the other hand, the results of the study conducted by [8] suggest that IC efficiency does not affect financial performance of Serbian ICT companies.

Characteristics of intellectual capital and industrial policy of innovation-intensive companies in Serbia

In the following part, an analysis of intellectual capital, competitiveness and industrial policies for a group of innovation-intensive companies in Serbia is performed. The research was conducted based on a survey. The sample included the companies from the territory of the Republic of Serbia from ICT sector and sector of professional, scientific, and technical activities. The companies were established in 2015, they have at least three employees and they submitted annual financial reports as of 2017. There are 320 such companies. The companies with less than three employees were excluded from the survey, because some questions from the survey referred to the views of the founders of the company regarding the majority of employees, and majority implies at least three employees.

In the further analysis of a potential sample, another 96 companies belonging to the sector of professional, scientific, and technical activities were excluded, since

Table 3: Activities of companies participating in the research

Predominant economic activities	Number of companies	
	N	%
A. Information and communication	**16**	**44%**
1. Information service activities	1	3%
2. Cable telecommunications	1	3%
3. Production and broadcasting of television programs	1	3%
4. Production of cinematographic works and audio-visual products	1	3%
5. Computer programming	9	25%
6. Recording and publishing of sound recordings and music	1	3%
7. Computer equipment management	1	3%
8. Web portals	1	3%
B. Professional, scientific, and technical activities	**20**	**56%**
1. Architectural activity	2	6%
2. Activity of advertising agencies	3	8%
3. Engineering activities and technical consulting	6	17%
4. Research and development in other natural and technical-technological sciences	1	3%
5. Business consulting activities	6	17%
6. Other professional, scientific and technical activities	1	3%
7. Specialized design activities	1	3%
Total	**36**	**100%**

Source: Authors' calculations.

in their case it was obvious that they were not innovative companies. The final number of companies meeting the criteria to be included in the research was 224.

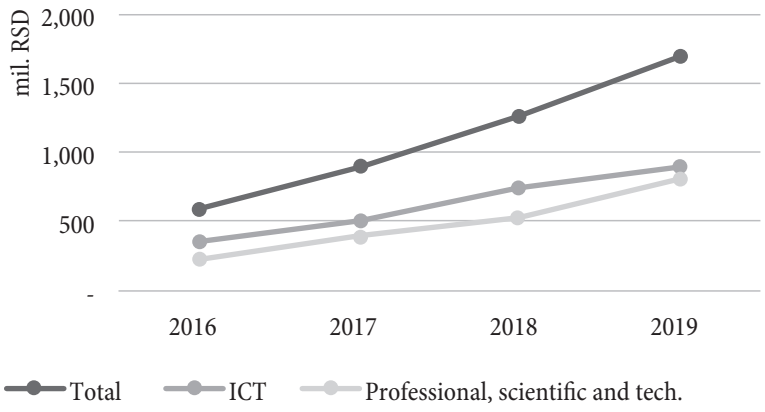
The survey was sent to 182 e-mail addresses of the owners (founders) of the companies. The data collection process lasted from December 2018 to April 2019. 36 responses were collected, meaning that the response rate was 19.8 percent. Table 3 shows the activities of the companies participating in the research.

In Table 3, it can be seen that 16 companies from ICT sector and 20 companies from the sector of professional, scientific, and technical activities participated in the research. Most companies in ICT sector are in computer programming. The companies from the sector of professional, scientific, and technical activities are in various activities, the most common ones being engineering activities and technical consulting (6 companies) and business consulting (6 companies).

The regional distribution of the surveyed companies is such that 20 companies have their headquarters in Belgrade and the remaining 16 in various places all over Serbia. At the end of 2017, only one company in the sample was classified as a small enterprise, while all others were classified as micro enterprises. By the end of 2019, two micro enterprises became small enterprises, and the total number of employees increased from 252 to 308, that is, by 22%. By monitoring the movement of the total income of the surveyed companies, we concluded that their total operating income grew annually (Figure 2). The companies in ICT sector generated higher operating income each year unlike the companies in the sector of professional, scientific and technical activities, although their share in the sample was only 44 %.

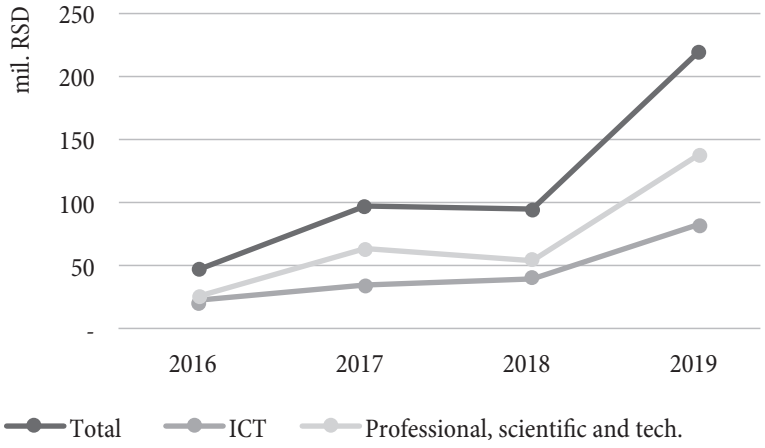
For the surveyed companies, the movement of their net profit in the same period was also analyzed. At the end of 2017, the companies from both sectors achieved

Figure 2: Movement of business income of the surveyed companies (2016-2019)



Source: Authors' calculations.

Figure 3: Movement of net profit of the surveyed companies (2016-2019)



Source: Authors' calculations.

significantly higher net profit than the previous year. However, in 2018 net profit decreased compared to 2017, while in 2019 net profit grew rapidly (Figure 3).

When it comes to a comparative analysis of the net profit of the two groups of the analyzed companies, it can be concluded that, although the companies from ICT sector achieved higher operating income in all years during the analyzed period, their net profit was lower than that of the companies from the sector of professional, scientific, and technical activities.

The next subject of the analysis is IC of the surveyed companies. IC of the analyzed group of companies was observed through its three components: human capital, structural capital, and relational capital. This categorization of IC is stated in Guidelines for *Managing and Reporting* on Intangibles (*Intellectual Capital Report*), or MERITUM Guidelines [24]. Similar to [27], [15] and [26], human capital encompassed the elements such as the knowledge of the founder (owner), commitment, motivation, social skills, and the interaction between team members. Table 4 shows how respondents assessed commitment and the knowledge of the founder (owner).

Knowledge, as an element of company's IC, was measured based on education and previous work experience of the owners. The owners of the surveyed companies had an average of 14 years of total work experience when founding their company, 8 years of work experience in the activities of their company and 4 years of work experience in managerial positions. The founders of the largest number of companies (as many as 83%) have a university degree. Commitment to work was measured based on the number of hours the owners spend working in their company, and in this particular case, the number averaged 41 hours weekly. From the data, it can be concluded that the length of work experience of business owners, the type of activities the owners were engaged in, as well as their experience in managerial positions have an impact on the formation of quantum of knowledge, as an element of IC of the companies.

Respondents were asked to assess various statements about motivation, social skills and the interaction between team members. The statements were assessed on a five-point Likert scale (1-strongly disagree, 5-strongly agree). Table 5 shows the number and the percentage of respondents who agree (4) and strongly agree (5) with the statements.

Motivation, as an element of intellectual capital, was also the subject of the research. As for motivation, 92% of the respondents stated that one of the main reasons why

Table 4: Knowledge of the founder and commitment as the elements of human capital

Human capital	Value
A. Knowledge of the founder (owner)	
1. Average number of years of total work experience	14
2. Average number of years of work experience in related business activities	8
3. Average number of years of work experience in managerial positions	4
4. Percentage of founders with university degree	83%
B. Commitment	
1. Average number of hours per week the owners spend working in their company	41

Source: Authors' calculations.

Table 5: Motivation, social skills and the interaction between team members as the elements of human capital

Human capital		N	%
A. Motivation	**Cronbach's alpha -0.07**		
1. One of the main reasons why I established a company is because I was not able to find a good job. (reverse scoring)		3	8%
2. One of the main reasons why I established a company is because I wanted to implement my personal ideas.		33	92%
B. Social skills	**Cronbach's alpha 0.587**		
1. I can evaluate other people well.		26	72%
2. I can estimate the right time to ask someone for assistance.		26	72%
3. I can adapt easily to any social situation.		29	81%
C. Interaction between team members	**Cronbach's alpha 0.628**		
1. Working in the team represents the highest priority for every team member (in comparison with other jobs or free time).		24	67%
2. The communication between team members is excellent.		25	69%

Source: Authors' calculations.

they decided to establish their company was that they wanted to implement their personal ideas, while only 8% of them stated that the inability to find a good job was the main reason for starting the business. Based on these answers, it can be concluded that most of the founders have internal (intrinsic), not external (extrinsic) motivation.

The social skills of the owners are of great importance for the formation of IC and the competitiveness of economic entities. This is also evidenced by [2], who proved that two social skills of the owners - social perception and social adaptability, have a positive effect on the success of start-ups. The authors defined social perception as the ability to judge other people, and social adaptability as the ability to adapt to different social situations. In our case, 72% of the respondents stated that they can evaluate other people well and know when it is the right time to ask someone for assistance, and 81% answered that they can easily adapt to any situation. Therefore, it can be assumed that the owners of the surveyed companies have a high degree of social skills. However, the offered answers should be considered with caution, due to a certain degree of subjectivity of business owners when assessing the social skills.

An important element of human capital is the quality of interaction between team members, since in many companies the owner or owners work in a team with other people. Lechler [21] stated that healthy interaction between team members characterized by communication, coordination and cohesion has a positive effect on the success of the company. The results of the survey prove that 67% of the respondents believe that teamwork is the highest priority for all members compared to other jobs or free time, and 69% believe that the communication between the members of their team can be assessed as excellent.

As for structural capital as an element of IC, in this research, similar to [15], it is divided into three elements: process innovations, production efficiency, and organizational culture. Respondents were asked to assess various statements on a five-point Likert scale (1-strongly disagree, 5-strongly agree). Table 6 shows the number and the percentage of respondents who agree (4) and strongly agree (5) with the statements about structural capital.

In addition to launching new products and services, it is essential for companies to introduce innovation processes that can contribute to improving productivity. In the analyzed sample, according to the owners, 64% of the companies introduced innovations leading to more efficient operations, and in 75% of the companies, most employees try to continuously improve the processes they perform. We believe that this is a high percentage of the representation of process innovations in business, as well as that the motivation of employees to continuously improve the processes they perform is very positive.

An important element of the structural capital of a company is the efficiency of product and service production. The time required to produce a product or service, as well as the number of errors that can occur in production are important determinants of business success, since they affect the efficiency of production and business, as well

Table 6: Process innovation, production efficiency and organizational structure as the elements of structural capital

Structural capital		N	%
A. Process innovation	**Cronbach's alpha 0.839**		
1. Our company introduced innovations leading to more efficient operations.		23	64%
2. Most employees try to continuously improve the processes they perform.		27	75%
B. Production efficiency	**Cronbach's alpha 0.790**		
1. Most employees are committed to continuously reducing operating costs.		16	44%
2. Most employees are committed to continuously increasing the quality of our products or services.		28	78%
3. We can respond to customer complaints faster than our competition.		25	69%
4. We need less time to develop a product or a service compared to our competition (from an idea to the market).		21	58%
5. We can produce a product or a service faster than our competition.		23	64%
C. Organizational culture	**Cronbach's alpha 0.625**		
1. Majority of the employees participate in making important decisions.		15	42%
2. Most employees agree with the decisions made in the company.		28	78%
3. Customer suggestions lead to changes in the organization.		16	44%
4. Our company quickly adapts its organizational structure to the changes in the environment.		25	69%

Source: Authors' calculations.

as the company's reputation and customer loyalty. The results of the survey revealed that 58% of the business owners believe they need less time to develop a product compared to their competition (from an idea to the market), and 64% of them believe they can produce a product or a service faster than their competition. Furthermore, 69% of the respondents assume their company can respond to customer complaints faster than their competition. As for employees, 78% of the owners believe that most employees are committed to continuously increasing the quality of the company's products. However, only 44% of the owners believe that most employees are committed to continuously reducing operating costs, leading to the conclusion that a significant number of companies need to focus on improving the processes that would reduce operating costs in the future.

Organizational culture, characterized by employee involvement, internal consistency and adaptability, has a positive effect on employee satisfaction and company performance, as indicated by [7]. Those authors define internal consistency as the degree of normative integration, and adaptability as the capacity for internal changes representing company's response to the changes in the environment. As for the surveyed companies, only 42% of the owners stated that the majority of the employees participate in making important decisions. On the other hand, 78% of owners believe that most employees agree with the decisions made in the company. Although 69% of the owners stated that their company quickly adapts its organizational structure to the changes in the environment, only 44% of them claimed that customer suggestions lead to changes in the organization. In conclusion, the owners of the company do not sufficiently involve their employees in making important decisions in the company. We believe that in the future, owners should pay more attention to customer suggestions and consider the possibility of including more of their employees in a decision-making process.

In terms of relational capital of the surveyed companies, it is divided into the following elements: customer and supplier relationships, support through informal networks and reputation of the company. The division is similar with the authors [27] and [15]. Respondents were asked to assess various statements on a five-point Likert scale. Table 7 shows the number and the percentage of respondents who agree (4) and strongly agree (5) with the statements about relational capital.

The first element of relational capital which is analyzed is customer and supplier relations. The structure of the customers of the surveyed companies is such that 42% of the respondents pointed out that most of their customers are from abroad. As for suppliers, 44% of the respondents stated that their companies mostly rely on local suppliers from Serbia. Although these are successful companies, the results of the research are quite different from the results obtained by [27]. In his research on the impact of IC on the performance of start-ups, this author showed that most successful companies rely on a small number of local suppliers, and that companies that depend only on local customers achieve the lowest growth and profitability in the sample, which is not the case with the surveyed group of domestic companies.

Table 7: Customer and supplier relationships, support through informal networks and company's reputation as the elements of relational capital

Relational capital			N	%
A. Customer and supplier relationships	**Cronbach's alpha**	**-5.60**		
1. Most of our suppliers are local companies from Serbia.			16	44%
2. Most of our customers are from abroad.			15	42%
B. Support through informal networks	**Cronbach's alpha**	**0.608**		
1. My family and friends provided me with full support when founding and running the company.			26	72%
2. Business partners, acquaintances, and former employers provided me with support when founding and running the company.			22	61%
C. Reputation of the company	**Cronbach's alpha**	**0.812**		
1. Most customers would recommend our company's products or services.			33	92%
2. Most customers re-purchase our company's products or services.			34	94%
3. Our company has a better reputation than most competitors.			24	67%

Source: Authors' calculations.

Within relational capital, as an element of IC, support through informal networks was especially considered, which according to some authors has a positive effect on the probability of survival and growth of newly established companies [5]. These authors also showed that the support of those with whom the entrepreneur has strong ties has a greater impact on the probability of survival and growth than the support of those with whom the entrepreneur has weak ties. The results of the survey displayed that 72% of the respondents believe that their family and friends provided them with full support when founding and running the company. 61% of them pointed out that when founding and running the company, in addition to the support of family and friends, the support was offered by business partners, acquaintances, and former employers. The answers indicate that for the domestic surveyed companies support through informal networks is crucial for their survival and success.

One segment of the survey dealt with the company's reputation. The company's reputation is an important element of relational capital since it allows a company not only to attract new and retain old customers, but also to more easily obtain resources and provide additional sources of financing. In the survey, the majority of respondents rated the reputation of their company as excellent. For example, 92% of the respondents stated that most customers would recommend their company's products, 94% stated that most customers re-purchase their company's products, and 67% claimed that their company has a better reputation than most competitors. From the above answers, it can be concluded that the respondents are rather satisfied with the reputation of their company, and even have an advantage over their competitors. However, due to the possibility of subjectivity in the assessment, the answers should be considered with caution.

For testing the reliability of the questionnaire (measurement scale), Cronbach's alpha was used (Tables 5-7). Factors such as process innovation, production efficiency, and reputation of the company have high reliabilities, all Cronbach's alphas are greater than 0.7. On the other hand, factors such as social skills, interaction between team members, organizational culture, and support through informal networks have lower reliabilities, all Cronbach's alphas are below 0.7. According to [14, p. 675], when dealing with psychological constructs, values below 0.7 can be expected because of the diversity of the contracts being measured. In addition, the value of Cronbach's alpha depends on the number of items on the scale. As the number of items on the scale increases, Cronbach's alpha will increase. Taking all this into account and bearing in mind that the aforementioned factors consists of a small number of items, it can be concluded that the reliabilities of those factors are acceptable. Finally, factors such as motivation and customer and supplier relationships have negative values of Cronbach's alpha. This is due to a negative covariance among items, which means that the reliability model assumptions are violated. This is a serious limitation and the results concerning these two factors should be interpreted with caution.

The development of innovation-intensive sectors implies the application of appropriate industrial policies. Industrial policies for these sectors include a wide range of measures that have impact on investment, financing, taxation, exports, income share, employee training, public procurement, intellectual property rights, etc. [11, p. 36]. Since these sectors are based on technology and knowledge, industrial policies that spark research and innovation are of prime importance. Therefore, state aid should be increased to cover various aspects of the innovation process in the sector [30, p. 185].

The specificity of industrial policy for innovation-intensive sector is that it has the elements of both horizontal and vertical policies. ICT policy-making can be approached in two ways, whereas both of them have advantages as well as disadvantages [11, p. 36]. The first approach is centralized from the top down, enabling better coordination, but on the other hand it gives less importance to local environment and creates implementation problems. The second approach is decentralized and consensus-based, allowing better identification of the needs of those to whom the policy is intended, on the other hand it may lead to delays or stagnation in policy definition. Considering the advantages and disadvantages of both approaches, it can be concluded that a centralized top-down approach is better when defining a policy, and the decentralized, consensus-based approach when implementing a policy.

When designing an industrial policy for innovation-intensive sector, it is desirable to separate it into four pillars so that policy measures and instruments can be more easily identified and adapted to the specific needs of those to whom the policy is intended. These pillars are: (1) infrastructure, (2) regulatory framework, (3) the use of ICT in the public sector, and (4) knowledge and competences [11, pp. 36-38].

(1) Infrastructure covers the measures that support and encourage the development and construction of telecommunications infrastructure enabling companies and households to use broadband technologies.

(2) Regulatory framework should include the measures that encourage the competition between companies providing ICT infrastructure and services, as well as the measures to facilitate the access and promote the use of new technology services. Additionally, legislation is essential since it enables protecting data, privacy, and intellectual property.

(3) Use of ICT and new technologies in the public sector refers to the use of ICT by the government, government offices and agencies to enhance public services and increase the efficiency of public administration. The use of ICT to disseminate information of public importance and provide public services also contributes to wide usage of new technologies by other users such as individuals and households.

(4) Knowledge and competences is the pillar that comprises government activities such as promoting high-tech and innovation clusters, promoting incubators for start-ups, financing research and development activities, and supporting companies which are trying to commercialize their innovations.

In addition to direct industrial policy measures contained in these four pillars, certain indirect measures for support and development of ICT sector in Serbia need to be implemented. These measures imply providing fiscal incentives for research and development, enabling start-ups to easily access venture capital, setting up regional support centers for support and cooperation between small and medium-sized enterprises in the software industry, developing clusters focused on high value-added products and services, and broadening ICT knowledge and skills through various education programs [11, p. 38].

Conclusion

Evaluating the conducted research, it can be concluded that IC today represents the basis of competitiveness, creation and increasing the value of all economic entities. It can also be concluded that IC today is one of the most important factors in the development and competitiveness of national economies, along with the fact that the most economically developed countries have the highest rank of competitiveness. The research showed that according to the competitiveness ranking, Serbia belongs to the last, fourth, most unfavorable group of European countries, with the worst results achieved regarding the indicators of financial system, health system, institutions, market size, and product market. The most important causes of low competitiveness of the domestic economy are: country size, low level and growth of GDP per capita, characteristics of the existing economic system, low investments of GDP in the field of R&D, unfavorable structure of entities in R&D, as well as weak connection of science, researches, and practices. The paper proposes that the new growth model of the domestic economy should be based on advanced industrial production and services with a high degree of added value, as well as the application of new economic policies that should be based on a heterodox approach.

The research based on the survey including the companies on the territory of the Republic of Serbia from the ICT sector and the sector of professional, scientific, and technical activities, conducted in late 2018 and early 2019, indicated that the degree of human capital development of the analyzed companies from innovation-intensive sectors is at a relatively high level, they have excellent reputation and their structural capital can be assessed as relatively developed with the potential for further improvement. In conclusion, further development of innovation-intensive sectors implies the application of appropriate industrial policies, which should include a wide range of measures, from investment to intellectual property protection. It is especially important that these measures encourage development and innovation.

This research, like most other studies conducted by using a survey, has several limitations. The first limitation relates to the reliability of the measurement scale. Some factors such as motivation and customer and supplier relationships have poor reliabilities and the results concerning those two factors should be interpreted with caution. The second limitation refers to the different perception of concepts by the respondents, while the third is subjectivity of the respondents when providing answers, which influenced IC of the company to be evaluated a somewhat better than it actually is.

Finally, the fifth and perhaps the biggest limitation is the fact that this study does not offer the assessment of the interrelationship between IC, competitiveness and industrial policies at the micro level nor at the level of the national economy. This research included only a small number of companies from innovation-intensive sectors in which IC plays an important role in gaining competitive advantage and business success. Although this study suggests that the competitiveness of the national economy is influenced by the level of IC development and the competiveness of economic entities, there is also a reverse effect since the government with its macroeconomic policies sets the framework for the development of IC and the competitiveness of economic entities. This causality could be a very interesting, but also a complex and challenging topic for future research.

References

1. Al-Ali, N. (2003). *Comprehensive intellectual capital management: Step by step.* John Wiley & Sons.
2. Baron, R. A., & Markman, G. D. (2003). Beyond social capital: The role of entrepreneurs' social competence in their financial success. *Journal of Business Venturing, 18*(1), 41–60.
3. Bontis, N. (2004). National intellectual capital index: a United Nations initiative for the Arab region. *Journal of Intellectual Capital, 5*(1), 13-39.
4. Borin, E., & Donato, F. (2015). Unlocking the potential of IC in Italian cultural ecosystems. *Journal of Intellectual Capital*, *16*(2), 285-304.
5. Brüderl, J., & Preisendörfer, P. (1998). Network support and the success of newly founded business. *Small Business Economics, 10*(3), 213–225.
6. Darvas, Z., & G., Wolff. (2016). *An anatomy of inclusive growth in Europe*. Bruegel.
7. Denison, D. R., & Mishra, A. K. (1995). Toward a theory of organizational culture and effectiveness. *Organization Science, 6*(2), 204–223.
8. Dženopoljac, V., Janošević S., & Bontis, N. (2016). Intellectual capital and financial performance in the Serbian ICT industry. *Journal of Intellectual Capital, 17*(2), 373-396.
9. Đuričin, D. (2017). *Escape from transitionism: What Serbia has learned from past failures and recommendations for the future*. Serbian Association of Economists.
10. Đuričin, D., & Vuksanović, I. (2015). Think through strategy: New vision for industrialization of economy and modernization of society. *Ekonomika preduzeća*, *63*(1-2), 1-15.
11. Đuričin, D., & Vuksanović-Herceg, I. (2018). Digital Serbia: Economic context adjustments for double GDP. *Ekonomika preduzeća*, *66*(1-2), 19-41.
12. Đuričin, D., & Vuksanović-Herceg, I. (2019). Three things an economy needs in the era of the fourth industrial revolution. *Ekonomika preduzeća*, *67*(1-2), 1-15.
13. Edvinsson, L., & Sallivan, P. H. (1996). Developing a model for managing intellectual capital. *European Management Journal, 14*(4), 356-365.
14. Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). SAGE Publications Ltd.
15. Hormiga, E., Batista-Canino, R.M., & Sanchez-Medina, A. (2011). The role of intellectual capital in the success of new ventures. *International Entrepreneurship and Management Journal, 7*(1), 71-92.
16. Janošević, S., & Dženopoljac, V. (2014). The relevance of intellectual capital in Serbian ICT industry. *Ekonomika preduzeća*, *62*(7-8), 348-366.
17. Käpylä, J., Kujansivu, P., & Lönnqvist, A. (2012). National intellectual capital performance: a strategic approach. *Journal of Intellectual Capital*, *13*(3), 343-362.
18. Kokeza, G. (2017). Intelektualni kapital kao nosilac privrednih promena i konkurentnosti. In S. Grk, & D. Molnar (Eds.), *Svet i Srbija – Vreme promena* (pp. 111-113). Centar za izdavačku delatnost Ekonomskog fakulteta u Beogradu.
19. Kokeza, G. (2019). Upravljanje intelektualnim kapitalom u cilju unapređenja poslovanja privrednih subjekata. In S. Grk, & D. Molnar (Eds.), *Svet i Srbija – Ekonomska i društvena gibanja* (pp. 237-240). Centar za izdavačku delatnost Ekonomskog fakulteta u Beogradu.
20. Kokeza, G., & Radosavljević, D. (2016). Influence of technological development on encouraging innovativeness of domestic industrial enterprises. *Ekonomika preduzeća*, *64*(7-8), 347-360.
21. Lechler, T. (2001). Social interaction: A determinant of entrepreneurial team venture success. *Small Business Economics, 16*(4), 263–278.
22. Lin, C. Y. Y., & Edvinsson, L. (2010). *National intellectual capital: A comparison of 40 countries*. Springer.
23. Magretta, J. (2011). *Understanding Michael Porter: The essential guide to competition and strategy*. Harvard Business Press.
24. Measuring Intangibles to Understand and Improve Innovation Management (MERITUM). (2002). *Guidelines for Managing and Reporting on Intangibles*. Author.
25. Pasher, E., & Shachar, S. (2005). The intellectual capital of the state of Israel. In *Intellectual capital for communities* (pp. 139-149). Butterworth-Heinemann.

26. Paunović, M. (2020). The impact of human capital on financial performance of entrepreneurial firms in Serbia. *Management: Journal of Sustainable Business and Management Solutions in Emerging Economies*, forthcoming.
27. Pena, I. (2002). Intellectual capital and business start-up success. *Journal of Intellectual Capital, 3*(2), 180–198.
28. Rembe, A. (1999). *Invest in Sweden: Report 1999.* Halls Offset AB, Stockholm.
29. Stewart, T. A. (2010). *Intellectual capital: The new wealth of organizations*. Crown Publishing Group.
30. Vuksanović, I. (2017). Industrial policy for Serbia: A matrix approach. *Ekonomika preduzeća*, *65*(1-2), 175-189.
31. World Economic Forum. (2017). *The Global Competitiveness Report 2017-2018*. Author. Retrieved from http://www3.weforum.org/docs/GCR2017-2018/05FullReport/TheGlobalCompetitivenessReport2017%E2%80%932018.pdf.
32. World Economic Forum. (2018). *The Global Competitiveness Report 2018*. Author. Retrieved from http://www.cdi.org.pe/pdf/IGC/2018/The_Global_Competitiveness_Report_2018.pdf.
33. World Economic Forum. (2019). *The Global Competitiveness Report 2019.* Author. Retrieved from http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf.

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THE IMPACT OF INNOVATION INDICATORS ON INCREASING EXPORTS OF HIGH TECHNOLOGY PRODUCTS

Uticaj inovacionih indikatora na povećanje izvoza visoko tehnoloških proizvoda

Abstract

Competitiveness of high-technology products (HTP) is more significant on the world market than products of medium and low quality. Increase in the innovation performance should lead to the growth of high technology application in production consequently rising exports of HTP as an important factor in increasing competitiveness. In this paper we wanted to analyze the correlations and conditionality of exports of HTP (share of exports in total country exports) and selected indicators that influence innovation: GDP, R&D costs (research and development cost in four sectors), degree of education of the population, number of researchers (in four sectors) and global innovation index (GII). The main aim was to identify which indicators contributed to the growth of exports of HTP in the analyzed countries (Serbia, Romania, Bulgaria and Hungary) in the observed period of ten years (2009-2018), in order to give certain recommendations on the measures and procedures Serbia should take to increase the level of innovation index and exports of HTP. In this paper, the exports of HTP was analyzed in Serbia, Romania, Bulgaria and Hungary. The influence of the chosen indicators on export of high technology products was analyzed using the POLS model, the fixed effects model and the random effects model. The results indicate that if analyzed countries do not find resources to intensify investment in education and R&D, they will not reach the average EU innovation indicators for many years. Also, it will seriously harm the competitiveness of the economies of the observed countries in the conditions dictated by the modern business environment and the challenges of the fourth industrial revolution (Industry 4.0).

Keywords: *innovation, high technology products, global innovation index, export*

Sažetak

Konkurentnost visoko-tehnoloških proizvoda (VTP) na svetskom tržištu je značajnija u odnosu na proizvode srednjeg i niskog kvaliteta. Povećanje inovacijskih performansi, kao bazične karakteristike VTP-a, trebalo bi da dovede do usvajanja visokih tehnologija u proizvodnji i, posledično, do povećanog izvoza VTP-a kao jednog od bitnih faktora konkurentnosti privrede. Shodno tome, u ovom radu smo analizirali korelaciju i uslovljenost izvoza VTP (udeo izvoza u ukupnom izvozu zemlje) i odabrane pokazatelje koji utiču na inovacije: BDP, troškovi istraživanja i razvoja (u četiri sektora), stepen obrazovanja stanovništva, broj istraživača (u četiri sektora) i indeks globalnih inovacija. Cilj rada bio je da identifikuje pokazatelje koji su u najvećoj meri doprineli rastu izvoza VTP-a u analiziranim zemljama (Srbija, Rumunija, Bugarska i Mađarska) u posmatranom desetogodišnjem periodu (2009-2018), kako bi se, na osnovu dobijenih rezultata istraživanja, dale određene preporuke o merama i postupcima koje bi Srbija trebalo da preduzme za povećanje nivoa indeksa inovacija i izvoza VTP-a. U okviru rada analiziran je i izvoz VTP-a u Srbiji, Rumuniji, Bugarskoj i Mađarskoj. Uticaj izabranih pokazatelja na izvoz proizvoda visoke tehnologije analiziran je pomoću POLS, modela, modela fiksnih i modela slučajnih efekata. Rezultati istraživanja u ovom radu pokazuju da ukoliko posmatrane zemlje ne pronađu resurse za povećano ulaganja u obrazovanje, istraživanje i razvoj još dugi niz godina neće dostići prosečne pokazatelje inovacija u EU. Takođe, to će ozbiljno narušiti konkurentnost privreda posmatranih zemalja u uslovima koje diktira savremeno poslovno okruženje i izazovi četvrte industrijske revolucije (Industry 4.0).

Ključne reči: *inovacije, visoko tehnološki proizvodi, globalni inovacioni indeks, izvoz.*

Introduction

The development of the European economy has been based on the concept of knowledge for many years now, while the Balkan countries more or less lag behind. In order to accelerate economic growth, countries need to create a set of prerequisites, above all, to increase the competitiveness of its economy. Increasing competitiveness is particularly important in product markets resulting from high technology.

Nowadays, it is believed that innovation is one of the main factors of economic growth of the country. Innovative businesses have a positive effect on the economic growth of the country and on the living standard of people [1] and innovations are created through process design. People are using new knowledge to produce new products and new skills are created within the company. Companies through the so-called inter-industry innovation collaborate and combine their knowledge as potential sources for innovation. In their innovation activities high-tech industries depend more on scientific research and development compared with low-tech industries [18].

Market demands and competition compel companies to innovate and explosion of knowledge in the globalized IT world is evident which changes the behavior of companies and their innovation processes [14]. Higher exports of HTP would increase Serbia's competitiveness in the world market, thereby achieving higher economic growth of the country and higher living standard of the population.

It can be considered that the higher exports of HTP is conditioned by the level of innovation of the country, that is, the Global Innovation Index (GII) will be increased by the higher investment of GDP in R&D. Despite qualitative development data, the inevitable factor that defines the quality of R&D and research and development innovation (RDI) and activities of the country is the National innovation system (NIS), which represents a set of all state and private entities involved in innovation activities, that is RDI activities of the country. The global economy and the development of science and technology have entered a new era characterized by intensive development and innovation of high technologies with numerous important discoveries world over [34].

Literature review

The beginning of the 21st century is characterized by complex processes of world development, in which multinational corporations and modern technology dominate, both in economic, and other industries [9]. Globalization has triggered trade liberalization, while competitiveness is constantly increasing and companies are forced to find new markets and thereby increase their effectiveness [8]. From the perspective of economic development, technology, knowledge, innovation, and related concepts are important primarily because technologically more advanced products or production processes increase the value added, which is the primary goal of economic development as it allows for the improvement of the living standard [25]. Serbia invests in research and development less than EU countries which follow the level prescribed by the Lisbon convention. This is especially true due to low private investment. However, these figures are expected to improve due to newly introduced tax incentives for companies that invest in research and innovation [10].

It is necessary to increase the national innovation capacity (NIC) of the state, it should strengthen innovative activities, primarily in product innovation, which will be able to expand existing and conquer new markets [4], for which it is necessary to acquire new knowledge and to create an efficient national innovation system. The technological revolution, based on a wide range of relatively independent innovations, is unconditionally linked to innovation generators, namely research institutes and universities [31].

The main results of a company's R&D processes are precisely innovations, but also improvement of business operations and creating value based thereon [13]. Innovation readiness is the ability to create and generate new ideas, but also their applications in practice, which is an important prerequisite for enterprise efficiency, permanent development and survival on the world market. The efficiency of the company is reflected in the development of new products (NPDs), which includes new functions in the company and their mutual coordination is a presumption of success. Nowadays large-scale innovations are changing the economic landscape. In the evolving technologies, new trends and

possibilities emerge so quickly that it is sometimes difficult for businesses to keep up [12]. In addition to automation and Artificial Intelligence (AI), another notable technology that is perceived as an enabler of progressive innovation is blockchain or distributed ledger technology which is perceived as one of the catalysts of the Fourth Industrial Revolution [33].

Many studies examined innovation and the relationship of innovation on the manufacturing industry from many aspects, such as the influencing factors, transformation and upgrading of the manufacturing industry, national innovation system, and impact of innovation on economic development [19]. For the success of innovative products on the HTP production depends on the possession of technology, skilled workers (employees) and quality resources. In order to become competitive, firms round out only the basic processes in creating HTP while leaving other processes in cooperative relationships with other companies that have advantages in lower costs, equipment or technology [6]. Research and attempts are being made to explain the complexity of the creation of new technologies and ways of their emergence as a factor of progress and progress itself [29].

The uncertainty of such outcome of the R&D process and the transformation process of the "laboratory product" into the "market product" is eliminated by the constant "Feed Back" link technology innovation - market demands [3]. Innovative technologies require specialist, i.e. expert knowledge. The main prerequisite its proper networking. These networks, for example between two potential partners, require intensive cooperation in research and development as well as at all stages of project implementation [2]. Competence in this complex process of cooperation in R&D between the two companies determine the levels [22], scope and scenarios of the specialized activities of each individual company in the development of several products [23], [28]. Information and knowledge can be exchanged with customers to co-create superior service delivery, which can promote new ideas and innovation capability to match customers' needs [30]. Creative industry is a skill-based industry, so knowledge and skill sharing activity becomes very important to be developed. Creative industries need innovation for their products [17]. The contribution of creative goods and services is recognized as an important path to economic development [26].

One approach presumes innovation capacity through the results of fundamental and applied research where researchers market valorizes discoveries and new knowledge by generating profit by creating new products through new technologies [27], [7]. Technology is the main driver of economic growth and social prosperity. In addition, it influences the growth model, economic policy platform and behavior (business model and strategy) of basic economic entities. Technology is an ambivalent phenomenon, a factor shaping opportunities (inclusive innovations) and threats (disruptive innovations), or both (structural changes) [11]. The most concrete link between innovation and competitiveness is found in Porter [24] that innovation is actually the basis for starting a competitive game on the market. High-tech products are the result of radical innovations that cost more and not all countries are able to invest enough in fundamental research [16]. There are also different potentials of countries in terms of innovation [21], [35]. The growth of the innovation potential of a country depends above all on its innovative performance measured by the intensity of research and development, the absorption capacity of enterprises, the breadth of cooperation on innovation, etc. [15].

Research methodology

The survey was conducted using the EUROSTAT database and the World Bank for four selected countries: Romania, Bulgaria, Hungary and Serbia for the period 2009-2018. The database on high-tech exports, research and development expenditures, education index were taken from the EUROSTAT database, GDP per capita from the World Bank database, while the Global Innovation Index was taken from the Global Innovation Index database.

The central part of the empirical research focuses on the impact of GDP (per capita) and the education index, which is calculated as a geometric average of two indicators: average years of schooling and expected years of schooling. The Education Index is one of the three components of the Human Development Index. The Global Innovation Index consists of two sub-indices - innovation inputs

and innovation outputs. R&D expenditures (as a share of GDP) on high-tech exports (as a share of total exports) were measured by panel regression.

The Human Development Index was omitted from the model due to the problem of multicollinearity that occurs due to the high degree of positive correlation with the Education Index. The problem of high positive correlation was also discovered between the variables Research and development expenditure (% of GDP) and Total R&D personnel, which is why the variable Total R&D personnel was omitted from the model, so that the final model looks like:

$$y_{i,t} = \alpha + \beta_1 \log x_{1\ i,t} + \beta_2 x_{2\ i,t} + \beta_3 x_{3\ i,t} + \beta_4 x_{4\ i,t} + u_{i,t}$$
$$i=1,\ldots,N;\ \ t=1,\ldots,T$$

where:

$y_{i,t}$ is High-tech exports (Exports of high technology products as a share of total exports)

$x_{1\ i,t}$ is GDP per capita (current USD)

$x_{2\ i,t}$ is Education index

$x_{3\ i,t}$ is Global Innovation Index

$x_{4\ i,t}$ is Research and development expenditure (% of GDP)

$u_{i,t}$ is Error term

N is Number of observation units (countries) in the sample

T is Time period covered by observations in the sample

The paper first examines the basic assumptions related to the characteristics of random error behavior $u_{i,t}$, and then tests were performed to select an adequate assessment method.

The model parameters were estimated first using the Pooled Ordinary Least Squared (POLS) model which implies that the random error $u_{i,t}$ has a normal distribution with mean zero and constant variance and that it is not correlated with explanatory variables in the model, i.e. that there is no endogeneity in the model. If any of the above assumptions are not conformed, the estimated parameters of model can be biased and unreliable. The consequence of endogeneity in the model, in addition to the bias and unreliability of the estimated parameters, is an unnoticed heterogeneity that has a significant systematic impact on the dependent variable High-tech exports.

To eliminate the consequences of unobserved heterogeneity, the assumption was made that the omitted variable does not vary with respect to the comparative dimension. If it is assumed that the omitted variable does not vary from year to year, then the disturbance term in the model can be decomposed into:

$$u_{i,t} = \mu_i + v_{i,t}$$

where μ_i is individual specific effect and $v_{i,t}$ remainder disturbance that varies over time and countries.

In the analysis, the Fixed effects model and the Random effects model were used as adequate to incorporate unobserved heterogeneity depending on individual specific effect μ_i. The Hausman test was used to assess the adequacy of the Random effects model.

Research results

Based on descriptive indicators for each individual country, the result was obtained that the share of exports of high-tech products in total exports in the analyzed period was highest in Hungary (17.59%), followed by Romania with 7.70%, while the lowest share was recorded in Serbia (2.25). In addition to being a country in sample with the lowest share of high-tech products in total exports compared to other countries included in the sample, Serbia also had the biggest decline in share of 32% in the analyzed period, while the highest growth was achieved by Bulgaria (28%). Romania remained at almost the same level. The share of exports of high-tech products in total exports varied in Hungary from 14.5 (2014) to 22.2 (2019), in Romania from 5.60 (2013) to 9.80 (2010), in Bulgaria from 3.70 (2011) to 5.90 (2018), and in Serbia from 1.90 (2018) to 2.80 (2009).

As it could be expected, the lowest GDP per capita was in Serbia and amounted to $ 6298, unlike Hungary, which has 2.2 times higher GDP per capita, Bulgaria, which has 1.2 times higher GDP per capita than Serbia and Romania, whose GDP per capita is 1.5 times larger than the Serbian. The highest GDP per capita growth was recorded in Romania (45%), and the lowest in Serbia (18%).

As we could expect when it comes to the level of education of the population, based on the value of the Education Index, Serbia is ranked the lowest in relation to Hungary, Romania and Bulgaria. The average value of

the Education Index in the analyzed period was 0.82 in Hungary, 0.78 in Bulgaria, 0.77 in Romania and 0.75 in Serbia. Approximately the same result was obtained on the basis of Human Development Index.

Ranking of the countries surveyed, according to which Hungary is ranked best compared to comparable countries in all ten years, Serbia permanently occupies the fourth place. From the point of view of the average rank of Global Innovation Index, Hungary has a ranking of 45.05; Bulgaria 41.26; Romania 38.24; and Serbia 36.40.

In the analyzed period, the largest share of R&D expenditures was in Hungary 1.28%, followed by Serbia 0.79%, Bulgaria 0.68% and the least Romania 0.44%. When we look at the growth rate of the share of R&D expenditures in relation to the country's GDP, we conclude that the highest growth was achieved in Hungary of 0.38 percentage points, and the lowest in Romania of 0.06 percentage points, while in Serbia the achieved growth was of 0.10 percentage points. Investments in research and development costs in the business enterprising sector show a lot of fluctuations as per individual both in the countries and in the observed years. Average values are highest for Hungary with 1.28%, Bulgaria 0.43%, Romania 0.21% and Serbia 0.20%. Serbia invests in this sector more than two times less than Bulgaria and more than six times less than Hungary.

Research and development spending in the state sector ranges from 0.15% to 0.27%. The average investments of Serbia are about 0.23% while for the three comparing countries they range from 0.18% to 0.20%. Expenditure on R&D in higher education shows drastic differences. Serbia has the most significant allocations, and average allocations are as follows: Serbia 0.35%; Bulgaria 0.05%; Romania 0.08%; and Hungary 0.20%. The costs of this sector are 1.5 times higher in Serbia than in Hungary, and significantly higher than in Romania and Bulgaria.

Table 1: Descriptive analysis of indicators by countries in the period 2009-2018.

Country	Variable	Mean	St. dev.	Min	Max
Bulgaria	High-tech exports	4.49	.75	3.70	5.90
Romania		7.70	1.29	5.60	9.80
Serbia		2.25	.30	1.90	2.80
Hungary		17.59	2.90	14.5	22.2
Bulgaria	GDP per capita (current US$)	7690	764.20	6812	9427
Romania		9568	1263.19	8214	12399
Serbia		6298	544.83	5588	7252
Hungary		13817	1116.59	12706	16410
Bulgaria	Education index	.78	.01	.75	.79
Romania		.77	.01	.76	.79
Serbia		.75	.02	.72	.78
Hungary		.82	.01	.81	.83
Bulgaria	Human Development Index (HDI)	.80	.01	.77	.81
Romania		.80	.01	.80	.82
Serbia		.78	.01	.76	.80
Hungary		.83	.01	.82	.85
Bulgaria	Global Innovation Index	41.26	1.40	38.42	42.8
Romania		38.24	1.06	36.83	40.3
Serbia		36.40	1.86	33.80	40.00
Hungary		45.05	2.09	41.70	48.12
Bulgaria	R&D expenditure (% of GDP)	.68	.14	.49	.95
Romania		.46	.05	.38	.50
Serbia		.79	.09	.68	.92
Hungary		1.28	.12	1.13	1.51
Bulgaria	Total R&D personnel	26080	5339.07	20810	34610
Romania		43023	1661.26	39065	44801
Serbia		21464	1702.68	19341	23629
Hungary		58499	7701.81	52522	79387

Source: authors` calculations

Research and development costs in the private non-profit sector are negligible and the data are incomplete.

The average number of researchers during the observed period was as follows: Hungary 58499; Romania 43023; Bulgaria 26080; and Serbia 21464. The number of researchers in Serbia engaged in the business sector increased significantly from year to year from 517 in 2011 to 3849 in 2016, but also Serbia significantly lagged behind the countries of the CEE that were compared. A significant shift in the number of researchers in Serbia still shows that this is still insufficient (2255 average number of researchers in the analyzed period), unlike Bulgaria, which has an average of 7873 researchers in the observed sector, Romania 11552, and Hungary as many as 24145.

In public sector, the number of researchers is about twice as high in Romania (11818), Bulgaria (9153) and Hungary (10035) compared to Serbia (5436). When it comes to the number of researchers in the higher education sector, the situation is somewhat different. The average number of researchers in the analyzed period was 8884 in Bulgaria, 19431 in Romania, 13757 in Serbia, and 24319 in Hungary. The number of researchers in Serbia in the private non-profit sector is small and the average in this period is 17 while in Hungary our database does not record the situation. Bulgaria and Romania have an average of 170 or 222 researchers.

In accordance with the research methodology, the model was first estimated with a Pooled ordinary least squares (POLS) estimator, then with a fixed effects model, time-fixed effects and a random effects model.

Table 2 shows the estimation results together with standard errors, number of observations, coefficient of determination, values of F-statistics and probability.

From Table 2, it can be seen that all four regression models are statistically significant: Pooled Ordinary Regression model (Prob = 0.000), Fixed effects model (Prob = 0.006), Time-fixed effects model (Prob = 0.000) and Random effects model (Prob = 0.000). Based on the numerical value of Adj. R-Squared we can conclude that in almost all models the exploratory power is at an extremely high level (over 90%) except for models with fixed effects (46%).

Given the explanatory power of the model with random effects, the high degree of coefficient of determination and the statistical significance of each individual variable in the model, Hausman's test of the adequacy of the model with random effects in relation to the Time-fixed effects model was performed. Based on the numerical value of Chi2 statistics (-4.02), the null hypothesis cannot be rejected that the difference in coefficients is not systematic, which is why we can no longer use the model with random effects, so we opt for the Time-fixed effects model as appropriate.

Table 2: Comparative presentation of estimated parameters POLS, Fixed effects model, Time-fixed effects model and Random effects model

Independent's variables	POLS model	Fixed effects model	Time-fixed effects model	Random effects model
GDP per capita	14.01*** (1.517)	4.12 (2.712)	15.91*** (1.357)	14.01*** (1.517)
Education index	47.29** (18.806)	36.45** (17.898)	35.37** (15.147)	47.29** (18.806)
Global Innovation Index	-.11*** (.020)	-.06** (.018)	-.16 (.106)	-.11*** (.020)
R&D expenditure (share of GDP)	3.09** (1.340)	-4.00 (2.677)	3.66*** (2.677)	3.09** (1.340)
_cons	-155.35*** (11.461)	-52.91* (29.684)	-162.08*** (8.938)	-155.35*** (11.461)
No. of obs.	40	40	40	40
Adj. R-Squared	0.91	0.46	0.95	0.92
F-test	98.75	4.37	181.42	394.98
Prob>F	0.000	0.006	0.000	0.000

Note: *Significance level - 10%, ** Significance level - 5%, *** Significance level - 1% (standard errors are shown in parentheses)

Based on the level of significance of the variables in the Time-fixed effects model, a positive statistically significant impact of GDP per capita, Education index and R&D expenditure on High-tech exports was identified, and it was determined that the Global Innovation Index has no statistically significant impact on the share of high-tech. In other words, an increase in GDP per capita, the level of education of the population and the share of R&D expenditures in GDP leads to an increase in the share of high-tech products in total exports.

Discussion

Governments of many European countries are directly or indirectly encouraging development of innovation activities [32]. These incentives in the EU primarily relate directly to, or through fiscal incentives, subsidizing research activities. One of the prerequisites for successfully delivering new products and services to the market is the cooperation at different levels: between researchers, inventors, companies, R&D (research and development) support institutions, within parts of the subsystem, ranging from team levels: enterprises to sectors such as R&D and universities.

Based on the percentage of GDP that is allocated for research and development, EU countries can be divided into four groups. The first, which includes countries that spend less than 1% of GDP on research and development, includes Bulgaria, Croatia, Cyprus, Latvia, Lithuania, Malta, Romania and Slovakia. The second group of countries whose allocations for research and development amount to between 1 and 2% of GDP are the Czech Republic, Estonia, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Portugal, Slovenia and Spain, while Belgium, Finland, France and the United Kingdom are in the group of countries that allocate more than 2 to 3% of GDP for research and development. Only Austria, Germany, Denmark and Sweden allocate more than 3% of GDP for research and development.

Serbia as a candidate country for admission to the European Union should have a functioning market economy and be competitive in market competitions with other economies within the European Union. For these reasons, Serbia should make a strategy to overcome technological lag and secure faster and sustainable growth.

High-tech products and their exports can only bring better competitiveness and improve the balance of payments situation in Serbia. For these reasons, we agree with the view that the development strategy of Serbia in the next decade should be export oriented according to the concept of "export or die". Although it seems too strict, we consider this view to be an imperative that the country's policy is focused on the production and export, primarily of the HTP, and on the strengthening of all the country's production resources. We are especially referring to the support of such production and export orientation by the political elites of the country. These production and export-oriented companies in Serbia have a great need for innovation [5].

Conclusions

The key goal of the Lisbon Strategy (2010) is to accelerate the transition of countries towards knowledge-based economy. This strategy implies that education, research, training and innovation effectively contribute to the country's economic and overall growth.

In addition to the fact that Serbia is the country in the sample with the lowest share of high-tech products in total exports, compared to other countries included in the sample, Serbia had the largest decline in the share of exports of high-tech products in the analyzed period. The lowest GDP per capita was in Serbia, unlike Hungary, which has 2.2 times higher GDP per capita. The highest GDP growth per capita was recorded in Romania, and the lowest in Serbia. When it comes to the level of education of the population, based on the value of the education index, Serbia is ranked the lowest in relation to Hungary, Romania and Bulgaria. In the analyzed period, the largest share of expenditures for research and development was notable in Hungary, followed by Serbia, Bulgaria and the least in Romania. Investments in research and development in the business-entrepreneurial sector show a lot of fluctuations, both in some countries and in the observed years. The average values are the highest in Hungary and the lowest in Serbia. The number of researchers in Serbia engaged in

the entrepreneurship sector increased significantly from year to year from 517 in 2011 to 3849 in 2016, but Serbia also lagged significantly behind the countries compared in this analysis. A significant growth in the number of researchers in Serbia continues, but still, it is insufficient.

HTP exports are exports of high technology products as a share of total exports [20]. Research on innovation and other indicators and their impact on export of HTP (percentage of total exports) shows that exports of HTP Serbia are quite low compared to CEE countries: Hungary, Romania and Bulgaria, and all three countries, our research shows, are dissatisfied with the level of HTP exports and level of competitiveness in relation to the EU average. In addition, the European Commission's assessment (which periodically monitors the progress of member states and candidate countries) shows the lagging behind of these countries, especially Romania and Bulgaria, in most innovation indicators. Exports of HTP is the highest in Hungary, during the entire observed period, on average 17.59% of the total exports of that country, in Romania it's 7.70%, in Bulgaria 4.49% and in Serbia only 2.25%.

In order to speed its pace in comparison with ERA and increase exports, HTP Serbia needs to increase the percentage of GDP allocation for R & I and find ways to reach as high as 3% as soon as possible. This is a hard-hitting goal, but positive developments in the economy of recent years give place to a moderate optimism.

One of the ways to increase investment in Serbia's innovative activities can be found in the EU Access Fund. Possible directions of additional investments are our diaspora and the participation of scientists of our origin in research. To help Serbia ease the export of HTP, the total innovational, cultural and social frameworks for entrepreneurship and innovation should be increased. It will be conditionally possible, based on our research, to provide some feasible directions for the development of Serbia and improve its innovative performance on the road to EU membership. The EU membership and open access chapters oblige Serbia to fulfill certain criteria in the field of R&D and, if it does not have to enter into its laws, join the ERA. The increase of innovation performance in Serbia should lead to greater application of high technologies in production and increased exports of HTP as an important factor in increasing competitiveness. From this increased competitiveness, opportunities for higher living standard of Serbian citizens will be created. In particular, the mandatory foreign evaluation of R&D and R&I activities of all entities in Serbia should be carried out. Existing financial resources are directed towards the business sector and strengthening of private investments in R&D and projects between the economy and the researchers. Since the largest number of researchers is concentrated in universities, it is necessary to allow them to be partners and direct contract partners for projects that support the creation of high technology and HTP. A public - private partnership should be an incentive for greater investment in R&D. It is necessary to introduce stimulant fiscal incentives and subsidies to domestic and foreign investors in R&D, along with the support given to foreign investors in Serbia. According to the results of some research that dealt with the new, Eastern European EU member states, each corporate investment in research and development of 1% on average increases the innovative output of companies by 0.6%.

These sources are "redistribution" of investments in high-tech companies, strengthening the participation of foreign funds, call to the investors and diaspora scientists, etc. Preferably, researchers from Serbia should be involved in the EU projects, to use better EU pre-accession funds and to help the positive practices of countries in the region and developed EU countries. Serbia needs to be given stronger support.

The development of research and development would make the R&D sector more attractive in Serbia and cooperation with big foreign companies operating in Serbia may result in strengthening the research innovation potential of Serbia. Serbia is a country that is still in transition, especially in the field of R&D, and involvement in the ERA requires a lot of effort, political will, long-term vision and patience.

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References

1. Ahlstrom, D. (2010). Inovation and growth: How business Coutributes to Society. *Academy of Management Perspectives, 24(3)*, 10-23.
2. Caminati, M. (2016). Knowledge specialization and R&D collaboration. *Journal of Evolutionary Economics*, *26(2),* 247-270.
3. Cuerro-Cazurra, A., Nieto, M.J., & Rodriguez, A. (2018). The impact of R&D sources on new product development: Sources of funds and the diversity versus control of knowledge debate. *Long Range Planning*, *51(5),* 649-665.
4. De Massis, A., Frattini, F., Kotlar, J., Petruzzelli, A.M., & Wright, M. (2016). Innovation through tradition: Lessons from innovative family businesses and directions for future research. *Academy of Management Perspectives*, *30(1),* 93-116.
5. Dolfsma, W., & Van der Velde, G. (2014). Industry innovativeness, firm size, and entrepreneurship: Schumpeter Mark III?. *Journal of Evolutionary Economics, 24(4),* 713-736.
6. Domazet, I. (2018). Digital Transformation of Business Portfolio through DCRM. *Digital Transformation - New Challenges and Business Opportunities, London: Silver and Smith Publishers*, 214-235.
7. Domazet, I., & Marjanović, D. (2018). FDI as a Factor of Improving the Competitiveness of Developing Countries: FDI and Competitiveness. In Malepati, V. (eds.), *Foreign Direct Investments (FDIs) and Opportunities for Developing Economies in the World Market*, *82-104*. Hershey: IGI Global.
8. Domazet, I., & Marjanović, D. (2018). Foreign Direct Investment and Economic Development: Comparative Analysis of Bulgarian, Romanian and Serbian Economies. In Richet, X. (eds.), *Europe and Asia: Economic Integration Prospects, 150-171*. Nice: CEMAFI International.
9. Domazet, I., & Marjanović, D. (2017). Tax incentives as a factor of economic growth. In Malovic, M. & Roy, K. (eds.), *The state and the market in economic development: In Pursuit of millennium development goals, 91-107.* Brisbane: The International Institute of Development Studies.
10. Đuričin, D., & Lončar, D. (2020). Shaping the future of Serbia's economy: the new growth model and related economic policy platform. *Ekonomika preduzeća, 68(1-2),* 1-21.
11. Đuričin, D., & Vuksanović Herceg, I. (2018). Digital Serbia: Economic context adjustments for double GDP. *Ekonomika preduzeća,* 66(1-2), 19-41.
12. Đuričin, D. (2017). A sequenced reforms agenda for Serbia: Tailoring the concepts and instruments. *Ekonomika preduzeća,* 65(1-2), 1-24.
13. Gavrić, O., & Mitrović, Đ. (2019). Development of green economy and competitiveness of eu countries: macrolevel empirical analysis. *Ekonomika preduzeća, 67(7-8),* 415-425.
14. Golebiovski, T., & Lewandovska, M.S. (2015). Influence of internal and external relationships of foreign subsidiaries on innovation performance. Evidence from Germany, Czech Republic and Romania. *Journal of East European Management Studies, 20(3), 304-327.*
15. Hurmelinna-Laukkanen, P., & Olander, H. (2014). Coping with rivals absorptive capacity in innovation activities. *Technovation*, *34(1),* 3-11.
16. Kennedy, S., Whiteman, G., & Van den Ende, J. (2017). Radical Innovation for Sustainability: The power of strategy and open Innovation. *Long Range Planning*, *50(6),* 712-725.
17. Kurniawan, P., Hartati, W., Qodriah, S.L., & Badawi, B. (2020). From knowledge sharing to quality performance: The role of absorptive capacity, ambidexterity and innovation capability in creative industry. *Management Science Letters*, *10*, 433-442.
18. Law, K.M.Y., Lau, A.K.W., & Ip, W.H. (2019). What drives success in product innovation? Empirical evidence in high-tech and low-tech manufacturers in China. *International Journal of Technology Management, 79(2)*, 165-198.
19. Li, B., & Huang, L. (2019). The Effect of Incremental Innovation and Disruptive Innovation on the Sustainable Development of Manufacturing in China. *SAGE Open, January-March*, 1-14.
20. Marjanović, D., Ahmetagić, D., & Beraha, I. (2019). Comparative Analysis of High Technology Exports and Selected Innovation Indicators for Serbia and CEE Countries. *Economic Analysis, 52(2),* 93-103.
21. Marjanović, D., & Domazet, I. (2018). *Improving macro competitiveness - fiscal aspects*. Belgrade: Institute of Economic Sciences.
22. Olaru, M., Dinu, V., Keppler, T., Mocan B., & Mateiu, A. (2015). Study on the Open Innovation Practices in Romanian SMEs. *Amfiteatru Economic, 17(Special No. 9)*, 1129-1141.
23. Paraušić, V, Domazet, I., & Simeunović, I. (2017). Analysis of the Relationship Between the Stage of Economic Development and the State of Cluster Development. *Argumenta Oeconomica, 39(2),* 279-305.
24. Porter, M.E. (2008). *On Copetitin-Updated and Expanded Edition.* Harvard Business School Press.
25. Prašnikar, J., & Redek, T. (2019). Industry 4.0 as an answer to the productivity gap in european catchingup economies. *Ekonomika preduzeća, 67(3-4),* 193-211.
26. Raul, G., & Gautam, V. (2018). Creative industries and economic growth: stability of creative products exports earnings. *Creative Industries Journal, 11(1),* 22-53.
27. Romer, P.M. (1990). Endogenous Technological change. *Journal of Political Economy, 98(5),* 71-102.
28. Sandu, S., Gocshin, Z., Anghel, I., & Goschin, G. (2015). The R&D and Innovation systems in Romania and Bulgaria in the EU Context. *Procedia Economics and Finance*, *32*, 1804-1826.
29. Simmie, J., Sternberg, R., & Carpenter, J. (2014). New technological path creation: evidence from the British and German wind energy industries. *Journal of Evolutionary Economics*, *24(4),* 875-904.
30. Song, W., Ma, X., & Yu, H. (2019). Entrepreneurial Orientation, Interaction Orientation, and Innovation Performance: A Model of Moderated Mediation. SAGE Open, October-December 1-13.
31. Szabo, R., Vuksanović Herceg, I., Hanák, R., Hortovanyi, L., Romanová, A., Mocan, M., & Đuričin, D. (2020). Industry 4.0 Implementation in B2B Companies: Cross-Country Empirical Evidence on Digital Transformation in the CEE Region. *Sustainability, 12(22).*
32. Tadeschi, G., Vitali, S., & Gallegati, M. (2014). The dynamic of innovation networks: a switching model on technological change. *Journal of Evolutionary Economics*, *24(4),* 817-834.

33. Trbović, A., Vučković, A., & Drašković, B. (2020). Industry 4.0 as a lever for innovation: Review of serbia's potential and research opportunities. *Ekonomika preduzeća, 68(1-2*), 105-119.
34. Wang, Y., Zhang, X., & Li, Y. (2018). Analysis of Factors Influencing the Growth of HiTech Industries Based on Industry Technology Innovation Strategic Alliance. *Advances in Social Science, Education and Humanities Research*, *196*, 377-381.
35. Žitek, V., Klimova, V., & Kralova, M. (2016). Assessment of regional innovation system as an assumption for innovation policy adjustment. *Transylvanian Review of Administrative Sciences, 49 E*, 169-186.

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LOCAL COMMUNITY ATTITUDE TOWARD TOURISM DEVELOPMENT IN CAPITAL CITIES: EXAMPLE OF BELGRADE

Stavovi lokalnog stanovništva o razvoju turizma u prestonicama: - primer Beograda

Abstract

The research was done empirically in order to determine the relationship between socio-demographic variables and respondents' opinions on the advantages of the tourist offer of Belgrade over other European capitals as tourist destinations. The data were analyzed using descriptive analysis (percentages, arithmetic mean), Chi-square test, t-test, one-factor analysis of variance, multiple linear regression and Pearson's correlation coefficient. The level of statistical significance was set at $p<0.05$, and all obtained data were processed in the SPSS program, version 23.

Keywords: *Belgrade tourist offer, socio-demographic variables, local community attitudes, European capitals.*

Sažetak

Istraživanje je empirijskog karaktera i rađeno je u cilju utvrđivanja povezanosti između sociodemografskih varijabli i mišljenja ispitanika o prednostima turističke ponude Beograda u odnosu na ostale evropske prestonice kao turističke destinacije. Za analizu podataka korišćena je deskriptivna analiza (procenti, aritmetička sredina), Hi– kvadrat test, t-test, jednofaktorska analiza varijanse, višestruka linearna regresija i Pirsonov koeficijent korelacije. Nivo statističke značajnosti postavljen je na $p<0.05$, a svi dobijeni podaci su obrađeni u programu SPSS, verzija 23.

Ključne reči: *turistička ponuda Beograda, sociodemografske varijable, stavovi lokalnog stanovništva, evropske prestonice.*

Introduction: Importance of local community for tourism development process

The tourism industry underwent significant development worldwide with important consequences at top decision-making levels due to the importance of the attitudes and perceptions of the local communities for sustainable tourism planning strategies. Understanding the impact of tourism on the local communities is becoming a major topic for researchers, while being the key element in building sustainable and long-term tourism strategies. It was well pointed out that tourism is a "double-edged sword", because it involves both positive and negative aspects for the host communities [9, pp. 1-2]. Extensive research on the attitude of local communities toward tourism development is being conducted across the world [6, p. 8]. The results of the research carried out so far indicate that most of the local communities present a positive attitude towards tourism development [4, p. 4].

Based on the literature review, it can be concluded that research studies on the development aspects of tourism based on the values and specifics of socio-demographic variables are of great importance [2], especially when

it comes to the need to involve the local community in tourism development processes [20], [17], [10].

The benefits of involving the local community in tourism development processes are multiple [13]. Tourism has been acknowledged as one of the major attributes for cultural and economic development today and it offers an opportunity to the local communities. Community positive attitudes will encourage tourist satisfaction levels and contribute to the word-of-mouth promotion among them. Therefore, the involvement and the participation of the host community are pertinent to the success of the tourism development plan.

Local community support for tourism is necessary to ensure the commercial, socio-cultural, physiological, political and economic sustainability of the industry. The perception of the local residents was the most accurate factor in evaluating the current situation towards the destination due to the closeness of the area [8, p. 792].

Key drivers of tourism in capital cities

Cities, especially capital cities, play an important role in tourism industry. Since the 1980s, tourism in cities has started to grow rapidly in connection with deindustrialization. Most of the cities transformed from the places of production to the places of consumption. Urban or city tourism played a significant role in this process. The expansion of urban tourism and, especially, the city breaks have been empowered by the development in transport and information technologies [4, pp. 6-7]. The new, modern paradigm of tourism is shifting focus on the experience that tourists are having in a destination. The most successful are those service (experience) providers that are using technology to provide everlasting and unique experiences. In addition to the development of online travel agencies and computerized reservation systems, the dominance of social media and mobile phones in the process of customer relationship management, and the gamification concept are becoming more and more important [12, p. 316].

Based on the latest reports from the World Tourism and Travel Council (WTTC) on the economic impact of travel and tourism in 73 cities around the world, "over half (55%) of the world's population lives in urban areas. Cities have become global economic hubs, driving growth and innovation, while attracting more and more people who come to live, do business and discover them. Not surprisingly, therefore, nearly half of global international travel takes place in cities" [7, p. 135].

According to the WTTC report, the key values of tourism in major cities around the world are as follows:

- Travel and tourism (T&T) in these 73 cities directly accounted for 4.4% of city GDP (US$691 bn) and 17 million jobs, or 5.7% of total employment in these cities in 2018 [22].
- Revenues from international visitors will in many cases pay for infrastructure projects, the provision of public workers and services that improve the quality of life for residents.
- Cities which are over-reliant on domestic or international demand are more exposed to economic and geo-political risks.
- A few cities demonstrate a more balanced split between domestic and international demand, including Cancún, Munich, Cairo, Tokyo, Mecca, San Francisco and New York.
- Direct travel and tourism GDP across 73 cities grew by 3.6% in 2018, above the overall city economy growth of 3.0%.
- Six of the top ten largest cities in terms of the size of the travel and tourism sector (as measured by direct travel and tourism GDP) are in Asia-Pacific. As of 2018, Shanghai, Paris and Beijing have the largest T&T economies of the cities in the study.
- According to the study "Destinations for 2030", published by the WTTC, new generations of travelers can be expected by big cities, because the future of tourism is in the cities. The new so-called recreational urban tourism that was first started by young people from Asia is much more than a traditional city break.

Some authors [25], when it comes to tourism in large cities and capital cities, emphasize the importance of cultural events, stressing "that the organization of events, as a form of modern tourism, in connection with culture (music festivals, concerts, exhibitions, etc.), sports (regattas, water skiing, etc.), tradition (carnivals,

gastronomy, folklore, etc.) or business events is gaining more and more importance in modern tourism in many areas" [25, p. 104].

The motives for the visitors' arrival to the capital cities are numerous and quite different [24]. A large number of visitors come to cities for tourist reasons or business purposes, such as conferences and meetings or for cultural and different administrative reasons. Capital cities and global financial centers have registered an enormous growth, notably in business-oriented travel [18, p. 372]. The meetings industry creates significant effect on destination development, on a national, regional and local level. The meetings industry market generates a strong direct, indirect and induced effect, and only the five strongest economies in Europe, generate alone over US$140 billion [11, p. 282].

Approximately 80% of Europe's population lives in cities and towns, making Europe the world's most built-up continent, and the urban question one of the major issues for future years. The fact that people are taking more, but shorter, holidays, the advent of the single market and the general increase in mobility have also helped to build up urban tourism in Europe. Culture is a very important factor for the success of a city. In Europe, tourism has been particularly developed in the form of heritage attractions such as historic houses, interpretive centers, parks and monuments. In addition to historical or heritage attractions, people of the touristic places are seen as a key component of the cultural tourism product. An important feature of recent European tourism development has been the explosion in cultural or heritage tourism [5, pp. 95-101]. Today, the appeal of many European cities lies to a large extent in their past; in the case of Paris, the boulevards, the palaces and the remnants of World Fairs, such as the Eiffel Tower are the main attractions for tourists. In Vienna, the palaces, churches, museums, cultural institutions, and the urban environment that are nestled along the Ringstraße are responsible for the touristic appeal of the city. On the other hand, a lack of urban planning also characterizing many historic cities creates a perfect atmosphere for tourism consumption and gaze; a good example for that could be seen in the old city of Barcelona [18, p. 372].

In comparison with certain tourist values, in addition to the previously emphasized cultural-historical and other events, the meetings tourism has a special significance for Belgrade and other capitals of Europe. It is interesting to note, for example, that the congress tourism market in the five leading European countries generates revenues of more than US$140 billion, while this market in Serbia in 2017 generated more than US$26 million [11, p. 282].

Some authors in the development of tourism, which is important for all major cities, Belgrade included, emphasize as a very important factor culture and codes of ethics in the form of everyday life [21], while others [15] stress the importance of culture in terms of the relationship between tourism and the environment, communication between different cultures, etc. When it comes to the development of tourism in large cities and capital cities, some authors place emphasis on the contribution of tourism development to increased employment [1]. In addition to the previously emphasized values in the tourist offer of large cities, the quality and prices of food and beverages are certainly of great importance [19] in the context of service quality and staff friendliness, which is analyzed in the paper as one of Belgrade's advantages over other European capitals.

The current COVID-19 pandemic has a negative influence on city tourism and tourism industry as a whole. According to the latest data [26, p. 3], in the first eight months of 2020, international tourist arrivals declined 70% over the same period of the last year, amid global travel restrictions including many borders fully closed, to contain the ongoing COVID-19 pandemic. The decline in January-August 2020 represents 700 million fewer international tourist arrivals compared to the same period in 2019, and translates into a loss of US$730 billion in export revenues from international tourism, more than 8 times the loss in 2009 under the impact of the global economic crisis.

Description of the sample

According to the defined goal of the research, in order to analyze the advantages of Belgrade in relation to other European capitals as tourist destinations, eleven inherent values of Belgrade were defined that are important to tourists, as statements offered to respondents for opinion

(answer). The research was done examining the correlation between socio-demographic variables (gender, age, level of education, monthly personal income of the respondent and monthly personal income of the respondent household, number of household members and number of income-earning household members) and respondents' opinions on Belgrade's advantages over other European capitals as tourist destinations. Respondents were selected by random sampling [14, p. 68] from the total population of Belgrade as the final basic set [3]. A total of 140 respondents participated in the study; the structure of the sample is given in Table 1.

Table 1: Structure of the sample

		Count	Column N %
Gender	Male	84	60.0%
	Female	56	40.0%
Age	Under 20	12	8.6%
	20-30	20	14.3%
	31-40	16	11.4%
	41-50	44	31.4%
	51-65	36	25.7%
	Over 65	12	8.6%
Employment status	Employed	88	62.9%
	Unemployed	24	17.1%
	Pupils	8	5.7%
	Students	8	5.7%
	Retirees	12	8.6%
Acquired education	Primary school	8	5.7%
	Secondary school	40	28.6%
	College or university	36	25.7%
	Master's studies	16	11.4%
	Doctoral studies	40	28.6%
Number of household members	One	8	5.7%
	Two	28	20.0%
	Three	36	25.7%
	Four	48	34.3%
	Five	12	8.6%
	Over five	8	5.7%
Income-earning household members	One	28	20.0%
	Two	88	62.9%
	Three	20	14.3%
	Four	4	2.9%
	Over four	0	0.0%
The amount of personal monthly income	Without personal income	16	11.4%
	Below average	16	11.4%
	Average	56	40.0%
	Above average	52	37.1%
The monthly income of the household	Below average	16	11.4%
	Average	80	57.1%
	Above average	44	31.4%

Source: Authors.

Aim and research methodology

The aim of the research is to examine the relationship between socio-demographic variables (gender, age, level of education, monthly personal income of respondents and monthly personal income of the respondent household, number of household members and number of income-earning household members) and respondents' opinions on Belgrade's advantages as a tourist destination.

The research is of quantitative type and was conducted through a questionnaire in which the first part of the question referred to socio-demographic data on respondents [23], while in the second part a group of dependent variables was operationalized through statements, which were evaluated using Likert scales.

Descriptive analysis (percentages, arithmetic mean), Chi-square test, t-test, one-factor analysis of variance, multiple linear regressions and Pearson's correlation coefficient were used for data processing and analysis. The level of statistical significance was set at $p<0.05$, and all obtained data were processed in the SPSS program, version 23.

The independent variables in the research were: gender, age, level of education, monthly personal income of the respondents and monthly personal income of the respondent household, number of household members and number of income-earning household members.

Dependent variables examined the respondents' opinion on the advantages of Belgrade over other European capitals as tourist destinations. This was done through 11 statements where respondents assessed the extent to which they agreed with them on a five-point Likert-type scale.

Analysis of research results and conclusions

Based on the opinion of the respondents, 45.7% of respondents believe that low prices of catering services are Belgrade's advantages over other European capitals as tourist destinations, while 57.2% of respondents see low prices of health services as an advantage. The abundance of cultural and entertainment events is recognized by 62.9% of respondents as an advantage of Belgrade over other European capitals as tourist destinations, while

the abundance of sports events is seen as an advantage by 51.4% of respondents. A large selection of quality food and beverages at low prices is, according to 68.9% of respondents, an advantage of Belgrade as a tourist destination compared to other European capitals, while low prices of local transportation in Belgrade and Serbia are an advantage for 60% of respondents. Every second respondent (51.4%) sees the advantage of Belgrade in the abundance of historical sites, cultural as well as historical monuments and archeological sites, while the largest number of respondents is undecided (45.7%) regarding Belgrade as an ideal shopping center for tourists. The outstanding nightlife offer, regardless of whether it involves international music scene or the Balkan folk scene, is recognized by 71.4% of respondents as an advantage of Belgrade over other European capitals, as tourist destinations. For 42.9% of respondents, Belgrade is the center of political events in the Balkans and it is an ideal combination of East and West, which they perceive as an advantage of Belgrade over other European capitals as tourist destinations. More than half of the respondents (57.2%) recognize the advantage of Belgrade as a tourist destination in the hospitable and friendly local population compared to other European capitals.

Respondents largely agree that the outstanding nightlife offer, regardless of whether it involves the international music scene or the Balkan folk scene (3.91), represents the advantage of Belgrade compared to other European capitals as tourist destinations.

Chi-square test results

The Chi-square test revealed a statistically significant difference (at the level of 0.05) in the respondents' wishes about future visits of tourists to Belgrade. The difference was found with regard to the age of the respondents $x^2(20,132)=64,893$, employment status $x^2(16,132)=65,122$, level of education $x^2(16,132)=73,977$, number of household members $x^2(20,132)=70,006$, number of income-earning household members $x^2(12,132)=34,080$, monthly personal income $x^2(12,132)=32,545$, monthly household income $x^2(8,132)=28,479$.

T-test results and discussion

The t-test examined whether there were differences between respondents based on gender in the answers to the dependent variables, within which the respondents' opinion on the advantages of Belgrade over other European capitals as tourist destinations was assessed.

The t-test shows that the respondents differ in terms of agreement with the statement "Low prices of catering services" $t(138) =2.17$, $p<.05$. The results show that low prices of catering services are significantly more recognized by men (3.52) than women (3.21) as an advantage of Belgrade.

Gender differences were also found in the statement "Large selection of quality food and beverages at low prices" $t(92,084) =2.61$, $p <0.05$. The results show that men (4.00) see this significantly more as the advantage of Belgrade as a tourist destination than women (3.57).

Table 2: Values of the Belgrade tourist offer as evaluated by respondents

	1	2	3	4	5	NA
1. Low prices of hospitality services	/	14.3%	40.0%	37.1%	8.6%	/
2. Low prices of health services	/	11.4%	31.4%	48.6%	8.6%	/
3. Abundance of cultural and entertainment events	2.9%	/	34.3%	48.6%	14.3%	/
4. Abundance of sports events	2.9%	2.9%	42.9%	40.0%	11.4%	/
5. Large selection of quality food and drinks at low prices	2.9%	2.9%	25.7%	45.7%	22.9%	/
6. Low prices of local transportation in Belgrade and Serbia	/	8.6%	31.4%	42.9%	17.1%	/
7. Abundance of historical sites, cultural as well as historical monuments and archeological sites	2.9%	5.7%	40.0%	34.3%	17.1%	/
8. Belgrade is an ideal shopping center for tourists	5.7%	20.0%	45.7%	20.0%	8.6%	/
9. Outstanding nightlife offer, regardless of whether it involves the international music scene or the Balkan folk scene	2.9%	2.9%	22.9%	40.0%	31.4%	/
10. Belgrade is the center of political events in the Balkans and is an ideal combination of East and West	2.9%	14.3%	37.1%	28.6%	14.3%	2.9%
11. Hospitable and friendly local population	/	8.6%	34.3%	22.9%	34.3%	/

**1- I do not completely agree; 2- I do not agree; 3- I am not sure; 4- I agree; 5- I completely agree; NA – no answer.*
Source: Authors.

The results show that the difference with regard to gender also exists in the statement "Low prices of local transportation in Belgrade and Serbia" t(138) =2.98, p <.01. Namely, according to the results, low prices of local transportation in Belgrade and Serbia are seen as an advantage of Belgrade over other European capitals

Table 3: Chi-square test results

Wishes about future visits of tourists to Belgrade. I would like Belgrade to be visited:	**Age**					
	<20	**20-30**	**31-40**	**41-50**	**51-65**	**>65**
By as many tourists as possible, regardless of where they are from	33.3%	40.0%	75.0%	63.6%	77.8%	66.7%
Exclusively by tourists from friendly countries	33.3%	0.0%	0.0%	18.2%	0.0%	0.0%
Exclusively by tourists with below-average household incomes	0.0%	0.0%	0.0%	9.1%	0.0%	0.0%
I would not like tourists to visit Belgrade	0.0%	0.0%	0.0%	0.0%	11.1%	0.0%
No attitude	33.3%	60.0%	25.0%	9.1%	11.1%	33.3%

Wishes about future visits of tourists to Belgrade. I would like Belgrade to be visited by:	**Employment status**				
	Employed	**Unemployed**	**Pupils**	**Students**	**Retirees**
As many tourists as possible, regardless of where they are from	72.7%	66.7%	0.0%	0.0%	66.7%
Exclusively by tourists from friendly countries	4.5%	16.7%	50.0%	0.0%	0.0%
Exclusively by tourists with below-average household incomes	4.5%	0.0%	0.0%	0.0%	0.0%
I would not like tourists to visit Belgrade	4.5%	0.0%	0.0%	0.0%	0.0%
No attitude	13.6%	16.7%	50.0%	100.0%	33.3%

Wishes about future visits of tourists to Belgrade. I would like Belgrade to be visited by:	**Acquired education**				
	Primary school	**Secondary school**	**College or university**	**Master's studies**	**Doctoral studies**
As many tourists as possible, regardless of where they are from	0.0%	30.0%	88.9%	100.0%	70.0%
Exclusively by tourists from friendly countries	50.0%	10.0%	0.0%	0.0%	10.0%
Exclusively by tourists with below-average household incomes	0.0%	10.0%	0.0%	0.0%	0.0%
I would not like tourists to visit Belgrade	0.0%	10.0%	0.0%	0.0%	0.0%
No attitude	50.0%	40.0%	11.1%	0.0%	20.0%

Wishes about future visits of tourists to Belgrade. I would like Belgrade to be visited by:	**Number of household members**					
	One	**Two**	**Three**	**Four**	**Five**	**>Five**
As many tourists as possible, regardless of where they are from	50.0%	57.1	77.8%	66.7%	66.7%	0.0%
Exclusively by tourists from friendly countries	0.0%	28.6%	0.0%	8.3%	0.0%	0.0%
Exclusively by tourists with below-average household incomes	0.0%	0.0%	0.0%	8.3%	0.0%	0.0%
I would not like tourists to visit Belgrade	0.0%	0.0%	0.0%	8.3%	0.0%	0.0%
No attitude	50.0%	14.3%	22.2%	8.3%	33.3%	100.0%

Wishes about future visits of tourists to Belgrade. I would like Belgrade to be visited by:	**Number of income-earning households members**				
	One	**Two**	**Three**	**Four**	**>Four**
As many tourists as possible, regardless of where they are from	42.9%	63.6%	80.0%	100.0%	0.0%
Exclusively by tourists from friendly countries	0.0%	13.6%	0.0%	0.0%	0.0%
Exclusively by tourists with below-average household incomes	0.0%	4.5%	0.0%	0.0%	0.0%
I would not like tourists to visit Belgrade	0.0%	4.5%	0.0%	0.0%	0.0%
No attitude	57.1%	13.6%	20.0%	0.0%	0.0%

Wishes about future visits of tourists to Belgrade. I would like Belgrade to be visited by:	**The amount of personal monthly income**			
	Without personal income	**Below average**	**Average**	**Above average**
As many tourists as possible, regardless of where they are from	50.0%	50.0%	64.3%	69.2%
Exclusively by tourists from friendly countries	25.0%	0.0%	7.1%	7.7%
Exclusively by tourists with below-average household incomes	0.0%	0.0%	0.0%	7.7%
I would not like tourists to visit Belgrade	0.0%	0.0%	0.0%	7.7%
No attitude	25.0%	50.0%	28.6%	7.7%

Wishes about future visits of tourists to Belgrade. I would like Belgrade to be visited by:	**The monthly income of the household**		
	Below average	**Average**	**Above average**
As many tourists as possible, regardless of where they are from	50.0%	65.0%	63.6%
Exclusively by tourists from friendly countries	0.0%	10.0%	9.1%
Exclusively by tourists with below-average household incomes	0.0%	0.0%	9.1%
I would not like tourists to visit Belgrade	0.0%	0.0%	9.1%
No attitude	50.0%	25.0%	9.1%

Source: Authors.

as tourist destinations significantly more by men (3.86) compared to women (3.43).

No statistically significant differences between the sexes were obtained for the assessment of other dependent variables.

One-factor analysis of variance and discussion

One-factor analysis of variance (ANOVA) investigated the influence of age on the opinion of respondents about the advantages of Belgrade over other European capitals as tourist destinations. Subjects were divided into six groups according to the age (up to 20 years, 20 to 30 years, 31 to 40 years, 41 to 50 years, 51 to 65 years and over 65 years).

One-factor analysis of variance (ANOVA) also investigated the impact of employment status on the opinion of respondents about the advantages of Belgrade over other European capitals as tourist destinations. Subjects were divided into five groups according to their employment status (employed, unemployed, pupils, students, retirees).

Table 4: The influence of age on the opinion of respondents

The influence of age on the opinion of respondents about:	F, p	Discussion
1. Low prices of health services	F(5,134)=4.70 p <0.01	Respondents older than 65 agree with this statement to a greater extent than other categories (4.33).
2. Large selection of quality food and drinks at low prices	F(5,134)=3.00 p <0.05	Respondents aged between 41 and 50 (4.18) agree with this statement to a significant extent, in comparison with other age categories.
3. Abundance of historical sites, cultural as well as historical monuments and archeological sites	F(5,134)=6.64 p <0.01	Respondents older than 65 mostly agree with this statement (4.33).
4. Belgrade is an ideal shopping center for tourists	F(5,134)=4.37 p <0.01	Respondents younger than 20 (4.00) agree more with the mentioned statement in comparison with other age categories.
5. Outstanding nightlife offer, regardless of whether it involves the international music scene or the Balkan folk scene	F(5,134)=4.62 p <0.01	Respondents older than 65 agree with this statement to a greater extent than other age groups (5.00).
6. Belgrade is the center of political events in the Balkans and is an ideal combination of East and West	F(5,130)=8.99 p <0.01	Respondents older than 65 (4.67) agree with this statement to a significantly greater extent, compared to other age groups.
7. Hospitable and friendly local population	F(5,134)=2.82 p <0.05	The oldest respondents (4.33) agree with the mentioned statement to a much greater extent compared to other age categories.

Source: Authors.

Table 5: The impact of employment status on the opinion of respondents

The impact of employment status on the opinion of respondents about:	F, p	Discussions – description
1. Low prices of health services	F(4,135) =4.62 p <0.01	Students agree with this statement to a much greater extent (4.00) than other categories.
2. Abundance of cultural and entertainment events	F(4,135) = 4.15 p <0.01	Students agree with this statement to a greater extent than other categories (4.50).
3. Abundance of sports events	F(4,135) = 4.20 p <0.01	Students (4.50) agree with this statement significantly more compared to other groups.
4. Low prices of local transportation in Belgrade and Serbia	F(4,135) = 5.27 p <0.01	Respondents agree with this statement to a greater extent than other pupils (4.50) and students (4.50).
5, Abundance of historical sites, cultural and historical monuments and archaeological sites	F(4,135) = 5.25 p <0.01	Students (4.50) agree with this statement significantly more than others.
6. Belgrade is an ideal shopping center for tourists	F(4,135) = 7.91 p <0.01	Students (4.50) agree with the mentioned statement to a significantly greater extent than other categories.
7. Outstanding nightlife offer, regardless of whether it involves the international music scene or the Balkan folk scene	F(4,135) = 5.95 p<0.01	Retirees agree with this statement to a greater extent than other groups (5.00).
8. Belgrade is the center of political events in the Balkans and is an ideal combination of East and West	F(4,131)=10.71 p <0.01	Retirees (4.67) agree with the mentioned statement to a significantly greater extent in comparison with other groups.
9. Hospitable and friendly local population	F(4,135)=3.68 p<0.01	Students agree with this statement to a greater extent than others (4.50)

Source: Authors.

The one-factor analysis of variance (ANOVA) also investigated the influence of education on the opinion of the respondents about the advantages of Belgrade over other European capitals as tourist destinations. Subjects were divided into five groups by educational level (primary school, secondary school, college / university, master's studies and doctoral studies).

The one-factor analysis of variance (ANOVA) also investigated the influence of the number of household members on the opinion of the respondents about the

Table 6: The influence of education on the opinion of respondents

The influence of education on the opinion of the respondents about:	F, p	Discussions – description
1. Low prices of catering services	F(4,135)= 5.39 p <0.01	Respondents with completed master's studies agree with this statement to a greater extent than other categories (3.75).
2. Low prices of health services	F(4,135) =4.06 p <0.01	Respondents with completed doctoral studies agree with the mentioned statement to a greater extent than other categories (3.90).
3. Abundance of cultural and entertainment events	F(4,135)=3.67 p<0.01	Respondents with only primary school agree with this statement to a greater extent than others (4.50).
4. Abundance of sports events	F(4,135)=4.20 p <0.01	Students (4.50) agree significantly more with this statement compared to other groups.
5. Low prices of local transportation in Belgrade and Serbia	F(4,135)=5.27 p <0.01	Respondents agree with this statement to a greater extent than other pupils (4.50) and students (4.50).
6. Abundance of historical sites, cultural and historical monuments and archaeological sites	F(4,135)=5.25 p <0.01	Students agree with the mentioned statement significantly more than others (4.50).
7. Belgrade is an ideal shopping center for tourists	F(4,135)= 7.91 p <0.01.	The results show that students (4.50) agree with the mentioned statement to a significantly greater extent than other categories.
8. Outstanding nightlife offer, regardless of whether it involves the international music scene or the Balkan folk scene	F(4,135)=5.95 p<0.01	Retirees agree with this statement to a greater extent than other groups (5.00).
9. Belgrade is the center of political events in the Balkans and is an ideal combination of East and West	F(4,131)=10.71 p <0.01	Retirees (4.67) agree with the mentioned statement to a significantly greater extent in comparison with other groups.
10. Hospitable and friendly local population	F(4,135)=3.68 p<0.01	Students agree with this statement to a greater extent than others (4,50).

Source: Authors.

Table 7: The influence of the number of household members on the opinion of respondents

The influence of the number of household members on the opinion of the respondents about:	F, p	Discussions – description
1. Low prices of health services	F(5,134) = 6.07 p <0.01	Respondents living in two-member households (4.14) agree with the mentioned statement more than other groups.
2. Abundance of cultural and entertainment events	F(5,134) =5.03 p <0.01	Respondents living in two-member households (4.29) agree with the mentioned statement to a significantly greater extent in comparison with other groups.
3. Abundance of sports events	F(5,134) = 5.09 p <0.01	Respondents living in two-member households mostly agree with this statement.
4. Large selection of quality food and beverages at low prices	F(5,134)=21.67 p <0.01	Respondents living in two-members households (4.57) agree with the mentioned statement more than other categories of respondents.
5. Low prices of local transportation in Belgrade and Serbia	F(5,134)=10.94 p <0.01	Respondents living in four-member households (4.08) agree with the mentioned statement to a much greater extent in relation to others.
6. Abundance of historical sites, cultural and historical monuments and archeological sites	F(5,134) =9.31 p <0.01	Respondents living in two-member households (4.43).
7. Belgrade is an ideal shopping center for tourists	F(5,134) = 6.03 p <0.01	Respondents who agree with this statement more than others, live in households with more than five members (3.50).
8. Outstanding nightlife offer, regardless of whether it involves the international music scene or the Balkan folk scene	F(5,134) =3.70 p <0.01	Respondents who live in two-member households (4.57) agree with the mentioned statement to a greater extent than other categories of respondents.
9. Belgrade is the center of political events in the Balkans and is an ideal combination of East and West	F(5,130) =8.41 p <0.01	Respondents living in two-member households (4.00) agree with the mentioned statement significantly more compared to others.
10. Hospitable and friendly local population	F(5,134) =7.74 p <0.01	Respondents living in two-member households agree with the statement to a greater extent than others (4.57).

Source: Authors.

advantages of Belgrade over other European capitals as tourist destinations. Subjects were divided into six groups according to the number of household members (one, two, three, four, five and more than five).

The one-factor analysis of variance (ANOVA) also investigated the influence of the number of household members who earn income on the opinion of the respondents about the advantages of Belgrade over other European capitals as tourist destinations. Subjects were divided into six groups according to the number of household members who earn income (none, one, two, three, four and more than four income-earning household members). There

Table 8: The influence of the number of income-earning household members on the opinion of respondents

The influence of the number of income-earning household members on the opinion of the respondents about:	F, p	Discussions – description
1. Low prices of catering services	F(3,136) = 4.12 p <0.01	Respondents living in households where four members earn income (2.00) agree with this statement to a lesser extent than others.
2. Low prices of health services	F(3,136) = 8.82 p <0.01	Respondents living in a household in which four members earn income (2.00).
3. Abundance of cultural and entertainment events	F(3,136) = 9.36 p<0.01	Respondents living in a household in which four member earn income (4.00).
4. Abundance of sports events	F(3,136) = 7.23 p <0.01	Respondents living in households where two members generate income (3.77).
5. Large selection of quality food and beverages at low prices	F(3,136)=16.24 p <0.01	Respondents living in a household in which two members earn income agree with this statement more than others (4.18).
6. Low prices of local transportation in Belgrade and Serbia	F(3,136)= 4.54 p <0.01	Respondents living in a household in which two members earn income agree with this statement to a greater extent than others (3.86).
7. Abundance of historical sites, cultural and historical monuments and archaeological sites	F(3,136)=40 p<0.01	Respondents living in a household in which two members earn income agree with this statement more than others (3.77).
8. Outstanding nightlife offer, regardless of whether it involves the international music scene or the Balkan folk scene	F (3,136) =2.77 p <0.05	Respondents living in a household in which two members earn income agree with this statement more than others (4.09).
9. Belgrade is the center of political events in the Balkans and is an ideal combination of East and West	F(3,132) = 2.79 p <0.05	Respondents living in a household in which two members earn income (3.57) agree with this statement to a greater extent than others.
10. Hospitable and friendly local population	F(3,136)=12.31 p <0.01	Respondents living in a household in which two members earn income agree with this statement more than others (4.18).

Source: Authors

Table 9: The impact of personal income on the opinion of respondents

The impact of personal income on the opinion of respondents about:	F, p	Discussions - description
1. Low prices of health services	F(3,136) = 7.32 p <0.01	Respondents with above-average personal incomes (3.92) agree more with this statement than other categories..
2. Abundance of cultural and entertainment events	F(3,136) =3.58 p <0.05	Respondents with an average personal income (3.93) agree with the this statement significantly more compared to other groups.
3. Abundance of sports events	F(3,136) = 3.28 p <0.05	Respondents without personal income agree with this statement more than other groups (3.75).
4. Large selection of quality food and beverages at low prices	F(3,136)=18.20 p <0.01	Respondents with above-average personal income (4.08) agree with this to a greater extent than other categories.
5. Low prices of local transportation in Belgrade and Serbia are the advantages of Belgrade as a tourist destination compared to other European capitals	F(3,136) = 8.40 p <0.01.	Respondents with above-average income (3.85) believe to a significantly greater extent than other groups that the mentioned low prices are an advantage of Belgrade as a tourist destination.
6. Belgrade is the center of political events in the Balkans and is an ideal combination of East and West	F(3,132)=18.70 p <0.01	The respondents with above-average personal income agree with this more than other categories (3.83).
7. Hospitable and friendly local population	F(3,136) = 3.03 p<0.05	Respondents with above-average income agree with this to a greater extent than other categories (4.08).

Source: Authors.

were no respondents living in a household in which more than four members of the household earn income, as well as in a household in which no member earns income.

One-factor analysis of variance (ANOVA) also investigated the impact of personal income on the opinion of respondents about the advantages of Belgrade over other European capitals as tourist destinations. Subjects were divided into four groups according to the amount of monthly personal income: without personal income, income below the average, average income and income above the average.

The one-factor analysis of variance (ANOVA) also investigated the impact of household income on the opinion of respondents about the advantages of Belgrade over other European capitals as tourist destinations. Subjects were divided into four groups according to the amount of monthly household income: households without income, households with below-average income, households with average income and households with above-average income. There were no households without income in the sample.

Multiple regression test and discussion

Multiple regression examined the relationship between gender, age, employment status, level of education, monthly personal income, monthly household income, number of household members and number of income-earning household members, as a linear combination of predictors with a group of dependent variables. We investigated whether the opinion of the respondents on the advantages of Belgrade over other European capitals as tourist destinations can be predicted.

Based on the obtained results, it is concluded that this linear combination of predictors proves to be important for predicting all dependent variables by which we examined the respondents' opinion.

Correlation

Using Pearson's linear correlation coefficient, the interrelationship between the dependent variables was examined, which we used to examine the respondents' opinion on the advantages of Belgrade in relation to other European capitals as tourist destinations.

The obtained results of the correlation matrix, listed in Table 12, show that the highest degree of dependence was found between the statements "Abundance of cultural and entertainment events" and "Abundance of sports events" ($r = + 0.771$, $p < .01$), which means that with increasing agreement with one statement the agreement with the other grows and vice versa.

Conclusion

Local community is one of the main stakeholders of tourism development processes. On the other hand,

Table 10: The impact of household income on the opinion of respondents

The impact of household income on the opinion of respondents about:	F, p	Discussions – description
1. Low prices of health services	F(2,137) =7.46 p <0.01	Respondents with above-average household income (3.91) agree more with this statement.
2. Abundance of sports events is an advantage of Belgrade as a tourist destination compared to other European capitals	F (2,137) = 4.6 p <0.05	The data show that respondents with above-average household income (3.73) agree with this to a greater extent than other categories of respondents.
3. Large selection of quality food and beverages at low prices	F(2,137) =4.19 p <0.05	Respondents with above-average household income (4.00) agree with the mentioned statement more than other groups.
4. Low prices of local transportation in Belgrade and Serbia	F(2,137)= 6.32 p <0.01	Respondents with above-average household income agree with the mentioned statement to a greater extent (3.82).
5. Abundance of historical sites, cultural and historical monuments and archaeological sites	F(2,137)= 4.76 p <0.05	Respondents with above-average household income (3.82) agree with this more than other categories of respondents.
6. Belgrade is the center of political events in the Balkans and is an ideal combination of East and West	F(2,133) =6.15 p <0.01	The results show that respondents with above-average household income agree with this statement more (3.80) in comparison to others.
7. Hospitable and friendly local population	F(2,137)=11.5 p <0.01.	Respondents with above-average household income (4.27) agree with this to a greater extent than other categories of respondents.

Source: Authors.

tourism development may have various impacts on local community, because tourism involves both positive and negative aspects for the local community. Local community support and their positive attitude towards tourism development are very important for successful tourism development. Socio-demographic variables influence residents' perception. Having in mind those facts, research was focused on the prevailing attitude of Belgrade residents towards tourism development in the capital city of Serbia and relationship between socio-

Table 11: Multiple regression: predictors and discussions

	Predictors	Discussions – description
1. Low prices of catering services	In this statement "low prices of catering services" $R^2 = 0.166$, F (8,131) = 3,263, p <0.1, as individual significant predictors were: β=-0.294, p<0.01, employment status; β= 0.225, p<0.5, degree β=0.249, p <0.5 and number of income-earning members β=-0.269, p <0.01.	The results show that men who are not employed, with higher education, who live in households where a smaller number of members earn income, agree most with this statement.
2. Low prices of health services	R^2=0.393, F (8,131) = 10.607, p <0.1 can be predicted statistically significantly, and the employment status of the respondents β=0.516, p were singled out as significant predictors p <0.01, level of education β=0.378, p <0.01 and household income β=0.309, p <0.01.	This means that respondents who are not employed, with higher education and higher household income, agree more with this statement.
3. Abundance of cultural and entertainment events	$R^2 = 0.183$, F(8,131) =3,676, p <0.1. The employment status of the respondents β= 0.331, p<0.01, the level of education β= 0.308, p<0.01 and the number of household members β=-0.392, p<0.01 were singled out as individual significant predictors.	The data show that respondents who are not employed, with higher education and a smaller number of household members, mostly agree with this statement.
4. Abundance of sports events	R^2=0.207, F(8,131)=4.285, p<0.1, The age of the respondents β = -0.21, p <0.5, work status β = 0.229, p <0.5, level of education β = 0.243, p <0.5, number of household members β = -0.358, p <0.01 were singled out as individual significant predictors. and household income β = 0.323, p <0.01.	It turns out that younger respondents, who are not employed, with higher education, fewer household members and higher household income, agree with this statement.
5. Large selection of quality food and beverages at low prices	R^2=0.263, F(8,131)=5,849, p<0.1, as significant individual predictors, the sex of the respondents β = -0.259, p <0.01 and the number of household members β = -0.405, p <0.01 were singled out	The results show that men living in households with a smaller number of members agree with this statement.
6. Low prices of local transportation in Belgrade and Serbia	R^2=0.161, F(8,131)=3.151, p<0.1, and the employment status of the respondents β=0.222, p<0.5 stood out as an individual significant predictor.	Based on the results, it can be concluded that this statement is mostly agreed upon by respondents who are not employed.
7. Abundance of historical sites, cultural and historical monuments and archeological sites	R^2=0.324, F(8,131)=7,853, p<0.1, as significant, the predictors stand out here: age of respondents β = -0.179, p <0.5, employment status β = 0.444, p <0.01, number of household members β = -0.398, p <0.01 and household income β = 0.382, p < 0.01.	This means that younger respondents, who are not employed and who live in households with a smaller number of members and higher household incomes, mostly agree with this statement.
8. Belgrade is an ideal shopping center for tourists	R^2=0.133, F(8,131)=2,512, p<0.05, and the age of the respondents β=-0.245, p<0.5 and employment status β=0.319, p<0.01.	The results show that younger respondents who are not employed agree the most with this statement.
9. Outstanding nightlife offer regardless of whether it involves the international music scene or the Balkan folk scene	R^2= 0.175, F (8,131)=3,483, p<0.1, and as individual significant predictors were the employment status of respondents β=0.408, p<0.01 and the number of household members β =-0.251, p<0.5.	This means that respondents who are not employed but live in households with a smaller number of members, agree with this statement to a greater extent.
10. Belgrade is the center of political events in the Balkans and is an ideal combination of East and West	R^2= 0.484, F(8,127)=14,914, p 0.1. The age of respondents β=-0.170, p<0.05, employment status β=0.459, p<0.1, level of education β=0.351, p<0.1 and household income β=-0.219, p<0.05 were singled out as individual significant predictors.	The data show that younger respondents who are not employed, with higher education and lower household income, mostly agree with this statement.
11. Hospitable and friendly local population	R^2= 0.304, F(8,131)=7,149, p<0.1, and as significant individual predictors the employment status of respondents β=0.402, p<0.01 and income households β =0.513, p<0.01were singled out.	This means that respondents who do not work and whose households have higher incomes mostly agree with this statement.

Source: Authors.

demographic variables and respondents' opinions on the advantages of the tourist offer of Belgrade over other European capitals as tourist destinations.

The local residents are aware of the impacts that tourism can have on their community. Results show that respondents have positive attitude towards tourism development in Belgrade and also show that Belgrade, as capital city of Serbia, has an advantage over other European capitals as tourist destinations.

Based on the statements offered to respondents regarding Belgrade's advantage over other European capitals as tourist destinations, respondents singled out the following advantages: "Outstanding nightlife offer regardless of whether it involves the international music scene or Balkan style folk scene", "Large selection of quality food and drinks at low prices", "Low prices of local transportation in Belgrade and Serbia", then "Abundance of cultural entertainment events", "Low prices of health services", "Hospitable and friendly local population" and "Abundance of sports events".

The Chi-square test revealed a statistically significant difference in the respondents' wishes about future visits of tourists to Belgrade. The difference was found with respect to the age of the respondents, employment status, level of education, number of household members, number of income-earning household members, monthly personal income, monthly household income.

The t-test shows that the respondents differ in terms of agreement with the statement "Low prices of catering services". The results show that low prices of catering services as an advantage of Belgrade are significantly more recognized by men than by women. Gender differences were also found in the statement "Large selection of quality food and beverages at low prices". The results show that men see this as the advantage of Belgrade as a tourist destination significantly more than women. According to the results, the difference regarding gender also exists in the statement "Low prices of local transportation in Belgrade and Serbia", as low prices of local transportation in Belgrade and Serbia are seen as an advantage of Belgrade over other European capitals as tourist destinations significantly more by men than women.

The results of the one-factor analysis show that there are differences between the respondents in agreeing with the statement "Low prices of health services", whereby the respondents older than 65 agree with this statement more than other categories. Differences between respondents were also found when it comes to their agreement with the statement "Large selection of quality food and beverages at low prices", where results show that respondents aged between 41 and 50 agree to a significant extent with the mentioned statement, in comparison with other age categories. The same analysis found a statistically significant difference between the respondents and the agreement with the statement "Abundance of historical sites, cultural and historical monuments and archaeological sites", showing that respondents older than 65 mostly agree with the above statement. The results indicate that

Table 12: Correlation between dependent variables

	1	2	3	4	5	6	7	8	9	10	11
1	1	.612**	.210*	.179*	.128	.296**	.330**	.459**	.387**	.281**	.253**
2		1	.542**	.578**	.400**	.497**	.537**	.430**	.487**	.438**	.577**
3			1	.771**	.474**	.405**	.516**	.485**	.568**	.376**	.467**
4				1	.458**	.517**	.588**	.585**	.466**	.385**	.485**
5					1	.592**	.350**	.075	.186*	.287**	.313**
6						1	.404**	.361**	.013	.245**	.506**
7							1	.617**	.581**	.489**	.747**
8								1	.490**	.347**	.300**
9									1	.314**	.409**
10										1	.405**
11											1

*p< .05; **p< .01
Source: Authors.

the difference between the respondents also exists when it comes to agreeing with the statement "Belgrade is an ideal shopping center for tourists", where respondents under 20 years of age agree with the mentioned statement to a greater extent in comparison with other age categories.

The results of this research also show that the highest degree of dependence was found between the statements "Abundance of cultural and entertainment events" and "Abundance of sports events", which means that with increasing agreement with one statement the agreement with the other grows and vice versa.

It can be concluded that relationships between tourism and local community are complex and they may have both positive and negative impacts. It is important to underline that only positive impacts and positive attitude of Belgrade residents about tourism offer and tourism development were analyzed in this paper. Therefore, future research should be extended to a negative attitude. In that way, future research will provide important information about local community attitude toward tourism development in Belgrade which can be used by policy makers to formulate and develop plans for future sustainable tourism development of Belgrade as a capital city.

References

1. Aliyev, T.G., Aliyeva, S.T. (2018). *The role of major cities in formation of employment structures.* DOI: 10.20861/2304-2338-2018-122-001.
2. Anson, T.H., Ma, Chow, S.Y.A., Cheung, T.O. L., Lee, M.Y. K., & Liu, S. (2018). Impacts of tourists' sociodemographic characteristics on the travel motivation and satisfaction: The case of protected areas in South China. *Sustainability*, 2018, *10*(10), 3388; doi:10.3390/su10103388.
3. Ben-Shlomo, Y., Brookes, S., & Hickman, M. (2013). *Lecture notes: Epidemiology, evidence-based medicine and public health* (6th ed.), Wiley-Blackwell, Oxford.
4. Dumbrovská, V., & Fialová, D. (2014). Tourist intensity in capital cities in Central Europe: comparative analysis of tourism in Prague, Vienna and Budapest. *Czech Journal of Tourism*, *3*(1), 5-26. DOI: 10.2478/cjot-2014-0001.
5. Galdini, R. (2007). TOURISM AND THE CITY: OPPORTUNITY FOR REGENERATION. *TOURISMOS: AN INTERNATIONAL MULTIDISCIPLINARY JOURNAL OF TOURISM*, *2*(2), 95-111.
6. Głąbiński, Z., & Duda, T. (2017). The local community perception of tourism development. The case study of Gryfino County–Western Pomerania, Poland. *Bulletin of Geography. Socio-economic Series*, *37*(37), 7–23.
7. Ramírez-Escudero, A. (2020), Cities as Hubs Between the Physical and Virtual Worlds, available at https://urbannext.net/cities-as-hubs-between-the-physical-and-virtual-worlds/ (19.11.2020), and *Cities Economic Impact Report* , file:///C:/Users/SLAVOL~1/AppData/Local/Temp/City_Travel_&_Tourism_Impact_2019_Key_Highlights_Dec_2019-1.pdf (19.11.2020).
8. Hanafiah, M. H., Jamaluddin, M.R., & Zulkifly, M.I. (2013). Local community attitude and support towards tourism development in Tioman Island, Malaysia. DOI: 10.1016/j.sbspro.2013.11.082.
9. Harun, R., Chiciudean, G.O., Sirwan, K., Arion, F. H., & Muresan, I.C. (2018). Attitudes and perceptions of the local community towards sustainable tourism development in Kurdistan regional government, Iraq. *Sustainability*, *10*(9), 2991. doi:10.3390/su10092991.
10. Kabisch, N. (2019). The Influence of Socio-economic and Socio-demographic Factors in the Association Between Urban Green Space and Health. In *Biodiversity and Health in the Face of Climate Change*. Springer, Cham.
11. Kovačević, I., Zečević, B., & Hristov-Stančić, B. (2019). Economic impact of the meetings industry on a nation's development and the example of Serbia. *Ekonomika preduzeća*, *67*(3-4), 273-282.
12. Kovačević, I., Zečević, B., & Veljković, S. (2014). 'Gamification' concept: Theoretical framework and destination marketing management practice. *Ekonomika preduzeća*, *62*(5-6), 315-322.
13. Mensah, I. (2016). Effects of socio-demographic characteristics and perceived benefits of tourism on community participation in tourism in the Mesomagor Area of the Kakum National Park, Ghana. *Athens Journal of Tourism*, *3*(3), 211-230.
14. Mladenović, D., Đolević, V., & Šoškić, D., (2011). Economic Statistics, Faculty of Economics, Belgrade.
15. Robinson, M., Picard, D. (2006). Tourism, Culture and Sustainable Development, UNESCO-Culture Sector, Paris.
16. Sánchez-Villegas, A., Delgado-Rodríguez, M., Martínez-González, M. Á., & De Irala-Estévez, J. (2003). Gender, age, socio-demographic and lifestyle factors associated with major dietary patterns in the Spanish Project SUN (Seguimiento Universidad de Navarra). *European Journal of Clinical Nutrition*, *57*(2), 285–292.
17. Sinclair-Maragh, G. (2017). Demographic analysis of residents' support for tourism development in Jamaica. *Journal of Destination Marketing and Management*, *6*(1), 5-12. DOI: 10.1016 / j.jdmm.2016.03.005.
18. Shoval, N. (2018) Urban planning and tourism in European cities. *Tourism Geographies*, *20*(3), 371-376. DOI: 10.1080/14616688.2018.1457078.
19. Stone, M. J., Soulard, J., Migacz, S., & Wolf, E. (2017). Elements of Memorable Food, Drink, and Culinary Tourism Experiences. https://doi.org/10.1177/0047287517729758.
20. Tichaawa, T. M., & Makoni, L. (2018). Sociodemographic influences on residents' perceptions of tourism development in Zimbabwe. *GeoJournal of Tourism and Geosites*, *22*(2), 432–446. https://doi.org/10.30892/gtg.22213-300.
21. Trišić, I., Štetić, S. (2019). The effect of ethical codes on the everyday development of behavioral culture in tourism. *Kultura*, (162), 121-135.
22. Sampling. Retrieved from http://www.ef.uns.ac.rs/predmeti/mas/metodologija-naucno-istrazivackog-rada/20-uzorkovanje.pdf (06.05.2020).

23. Kweon, Y.J. (2011). Crash Data Sets and Analysis. Handbook of Trafic Psychology, https://doi.org/10.1016/B978-0-12-381984-0.10008-6.
24. Zečević, B. (2002). Dynamics of development of tourist destinations - the concept of life cycle. Economic Annals 44 (155): 143-155 DOI: 10.2298 / EKA0205143Z.
25. Zečević, B., Đorđević, B., & Nikolić, J. (2016). Visitor satisfaction of international cultural events in Belgrade. *Marketing*, *47*(2), 104-110.
26. UNWTO (2020). World tourism barometer and statistical annex, volume 18, issue 6, October 2020.

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EFFECTS OF THE PERCEIVED VALUE DIMENSIONS ON CUSTOMER LOYALTY: EVIDENCE FROM HOTEL AND TOURISM INDUSTRIES

Efekti dimenzija percipirane vrednosti na lojalnost potrošača – dokazi iz industrije hotelijerstva i turizma

Abstract

During the conditions of permanent competitive struggle within the tourism market, service organizations constantly need to work on improving their products and services in accordance with the expectations and preferences of their users. Offering the superior value of products and services is gaining more and more importance, thus enabling the achievement of positive financial performance and the creation of competitive advantage. The purpose of this paper is to analyze the effects of four dimensions of perceived value (functional, economic, emotional and social) onto the loyalty of service users in hotel and tourism industries. Two separate studies have been carried out within the paper thus performing the comparative analysis of gained results within the stated areas. In order to test the mentioned effects, a multiple regression analysis has been used, while in order to estimate the concordance and validity of the constructed models the reliability analysis and confirmatory factor analysis have been used. The results of the research show that out of four dimensions of perceived value, two key dimensions (emotional and social) achieve a statistically significant influence onto the loyalty of hotel service users. When it comes to tourism agencies, economic and social value stand out as the key drivers of loyalty. The identification of key dimensions of perceived value on customer loyalty in hotel and tourism management is of essential importance, since based on it, the managers of service companies can upgrade and improve the business cooperation with their users. The originality of this paper can be found in the usage of multidimensional concept of perceived value and in carrying out two separate studies: in the area of hotel and tourism industries, thus securing the comparative analysis of the results.

Keywords: *multidimensional concept of perceived value, models for value measurement, loyalty of service users, hotel industry, tourism industry.*

Sažetak

U uslovima neprestane konkurentske borbe na turističkom tržištu, uslužne organizacije permanentno moraju raditi na unapređenju svojih proizvoda i usluga u skladu sa očekivanjima i preferencijama svojih korisnika. Sve više dobija na značaju pružanje superiorne vrednosti proizvoda i usluga, koja omogućava ostvarenje pozitivnih finansijskih performansi i izgradnju konkurentske prednosti. Svrha ovog rada je razmatranje efekata četiri dimenzije percipirane vrednosti (funkcionalne, ekonomske, emocionalne i društvene) na lojalnost korisnika usluga u hotelijerstvu i turizmu. U radu su sprovedene dve odvojene studije i time je predstavljena komparativna analiza dobijenih rezultata u navedenim oblastima. U funkciji testiranja pomenutih efekata, primenjena je višestruka regresija, dok su za procenu usklađenosti i validnosti koncipiranih modela korišćene analiza pouzdanosti i konfirmativna faktorska analiza. Rezultati istraživanja ističu da od ukupno četiri, dve ključne dimenzije percipirane vrednosti (emocionalna i društvena) ostvaruju statistički značajan uticaj na lojalnost korisnika hotelskih usluga. Kada je reč o turističkim agencijama, kao ključni pokretači lojalnosti izdvajaju se ekonomska i društvena vrednost. Identifikacija ključnih dimenzija percipirane vrednosti na lojalnost korisnika u hotelijerstvu i turizmu je od suštinskog značaja, jer na osnovu njih menadžeri uslužnih preduzeća mogu unaprediti i poboljšati poslovnu saradnju sa svojim korisnicima. Originalnost ovog rada ogleda se u primeni višedimenzionalnog koncepta percipirane vrednosti i u sprovođenju dve odvojene studije: u oblasti hotelijerstva i u oblasti turizma, čime je obezbeđena uporedna analiza rezultata.

Ključne reči: *višedimenzionalni koncept percipirane vrednosti, modeli za merenje vrednosti, lojalnost korisnika usluga, hotelijerstvo, turizam*

Introduction

Within the modern marketing theory and practice, customer relationship marketing is becoming more and more a popular concept, based on the development of long-term relationships with the customers in order to achieve competitive advantage on the market and long-term profitability. The concept of customer relationship marketing is based on the identification, understanding and fulfilling the needs, attitudes and customer expectations. The marketing oriented companies must adjust their strategies to the needs of the targeted group of customers, since only in that manner the delivery of superior value, as well as satisfaction and loyalty can be secured. The created values are the result of knowing the needs, attitudes and customer preferences, and afterwards the ability of the company to create and deliver the expected value for the customers while achieving satisfactory profit [19, p. 38]. The creation and delivery of superior value for the customers is the basis for achieving positive business results of marketing companies. This value overcomes the customer expectations in the longer period of time. The superior value can not be found with competitors or is hard to copy, and that is why it represents the source of sustainable competitive advantage. Those companies which are focused on creating and delivering superior value have greater chances to achieve advantage on the competitive market and to improve their business performance. The successful implementation of marketing activities assumes the delivery of additional value (value "plus"), i.e. the benefits which surpass the fulfillment of basic customer needs. Therefore, the sources of additional value need to be continuously explored, as a step towards creating superior value. The identification of key elements of additional value and its continuous creation and delivery are the precondition for creating superior customer value.

During recent years, the customer value attracts more and more attention of researchers from the area of service marketing. The authors such as Huber *et al*., Johnson & Weinstein [13] [16] state that the term value is of abstract nature, so its interpretation is more complex and varies depending on the context within which it is used. The one-dimensional interpretation of perceived value for the customers can not be regarded any longer as a way to develop competitive advantage, since a basis has been created to develop a multidimensional value model. The business success of service industries, especially the hotel and tourism industries, directly depends on customer understanding, expectations and preferences, but also on the degree of adjustment of offered services [25]. The tourism services can be anticipated better if analyzed through the multidimensional concept of perceived value. Today, the foreign literature holds present a greater number of multidimensional models for measuring the service value in order to identify and analyze the dimensions, which represent the key loyalty drivers of service users in the hotel and tourism industries[14] [15] [21] [22] [30].

A modest number of domestic research papers was aimed at exploring the relationship between the dimension of perceived value and loyalty of service users, and this is especially the case within the sector of hotel and tourism industries. The aim of this paper to analyze the influence of four key value dimensions (functional, economic, emotional and social) onto the loyalty of hotel and tourism agencies service users. With that purpose in mind, two separate empirical studies have been carried out and the sample encompassed two sub-samples (154 users of hotel services and 149 users of tourism agencies services). In that manner, similarities and differences between the tested effects in these two stated service industries have been determined.

Literature review

The concept of perceived value in the hotel and tourism industries

The concept of value for consumers has become the subject of scientific interest during the last 20 years. The modern marketing companies are faced with fierce competition and more demanding customers, so they must be focused on the creation of superior value. In order to clearly analyze and interpret the process of value creation, it is needed to start from defining the term value for customers. The term "value for customers" is becoming very popular in modern marketing literature and is most often regarded

from the perspective of the customer. There is a great number of value definitions since modern customers expect multiple benefits from products and services. Due to the complexity of value for customers, there is no single approach towards the definition, dimensions and value measurement [8].

Regarded from the perspective of the customer, value is most often defined as the difference between benefits and costs, which appear as the final outcome of procuring and using products and services. The customers estimate the product or service value based on personal attitudes regarding their offered benefits and costs needed for their procurement. Certain authors point out that the customer value is their personal estimate about the benefits and costs which have occurred during shopping and/or using the products and services [17] [18] [27]. The customer value can be defined as the total estimate of product or service advantages during and after shopping [26]. One of the value definitions points out the customer value as his/her recognition regarding all tangible product elements and intangible services offered by the company [3]. The marketing literature points out as the most precise definition the one given by Holbrook which says that "the value for customers is the difference between benefits obtained by the customer when purchasing and using a product or service and the sacrifice referring to investment during purchasing and using of that product or service" [11]. Within the area of tourism, the value for customers is defined as the perceived experience during shopping and consuming the tourism services [24]. Based on multiple author definitions, it can be stated that the value for service users is a complex category, since it encompasses a greater number of different benefits obtained for invested money, time, psychological and physical efforts during the process of service procurement and usage.

It is valuable to point out that the value for customers is not static, bearing in mind that within the turbulent surroundings user needs and demands change. Hotels and tourism agencies must constantly explore the attitudes and expectations of their users in order to comprehend the benefits they perceive and based on that create adequate value. The users personally estimate the value of services based on the experience while using those services and/or gathering information from the outside world regarding its specifics [12]. Also, a greater number of alternatives standing at disposal during the process of shopping are estimated by customers based on offered advantages and costs needed for purchasing. The value estimate of a certain service is also determined by different current situations, as well as locations where it is estimated [18]. There is a possibility that the influence of external factors which effect the elements of value might cause the value of the same service to be overrated in different ways.

The interpretation and understanding of the essence of the customer value concept is of great importance for the definition of value elements. Trying to explain the customer value elements we start from the redefined concept of value. According to this concept, value is not exact, but rather an estimated category by the customers. It is determined by estimating the possible benefits offered by products and services and the estimated financial results which are needed to be invested in product or service procurement and usage. Most often the value is expressed by the basic formula V=B/C, where V stands for value, B for benefits and C for costs. Benefits include all advantages intended to be the pleasure of the customer during and after shopping for products and services [4, p. 25]. Costs, i.e. sacrifices include all investments needed for the procurement and usage of the products and services, such as: monetary expenditures, invested time, physical efforts and psychological efforts [20, p. 39].

Within the hotel and tourism industry, the value for customers is regarded as a group function of different services, experience factor and sacrifice [28]. The group of different services as a function element of service value plays a key role in creating value, since it encompasses a great number of differentiated services which can be consumed by the users. The basic services (transport, accommodation, food and drinks) do not satisfy any more the modern user demands, but the accent should rather be put on additional services such as fitness, excursions, different wellness and spa contents etc. The stated elements have a direct and proportional effect onto the value creation for users of tourism services. The greater the number of services used by the tourists for the same level of sacrifice, the greater the value of service offer shall be. The experience factor

stands out as a very important element in the process of creating and delivering the service to tourist users. The experience factor refers to the emotional value which derives from the experience of using a service. The modern users of tourism services are more mobile and curious and wish to feel pleasant while using a greater number of activities, wishing to obtain new experience etc. [6] Finally, the sacrifices encompass all efforts (financial, physical and psychological) undertaken by the users in the process of procuring and buying a service. Sacrifices as an element of value of the tourist service also encompass different kinds of risks while making the buying decisions, such as the financial, functional, psychological risk etc. Differing from the first element of tourist service value, sacrifices influence in a reverse proportional way the value creation. If the sacrifices connected to the using of tourist services are greater, the value shall be lower and *vice versa*. In the area of hotel and tourism industry, within the total value of service offer, the key role is also played by the attitudes of the service personnel towards the users, amongst which, trust, dedication and communication stand out [29].

Models for measuring value in the hotel and tourism industries

The modern customers actively participate in the process of value creation and delivery, since with their attitudes they can estimate the perceived value of a product or a service. While measuring the product and service value it is necessary to acknowledge several facts. The value judgement is based on a personal estimate of individual customers. Besides, it is important to point out that value measuring is, besides customer experience, based on their expectations concerning the product and service.

Measuring product and service value is a complex process for modern oriented service organizations and assumes a multidimensional approach. The first step towards measuring value assumes the recognition and exploring the dimensions which are relevant for the subject of measurement. Besides the tangible, intangible elements that achieve a significant influence onto the estimate of service value need to be taken into consideration as well. Within the area of hotel and tourism management, besides the tangible service dimensions, grades are given for the interaction between employed staff and customers, reputation, prestige and other intangible dimensions. The problem with measuring the hotel and tourism agency services refers to the understanding and acknowledgment of user expectations, since the user expectations are formed based on the personal judgement of service value. The method most often used for value measurement is the survey method. The survey method gives a detailed insight into those dimensions which are a significant value driver for the customers. The advantage of this method is seen in the possibility to question a greater and more representative sample, the respondents are willing to cooperate, the questions are clear and understandable and the pollsters have the ability to understand and correctly detect the answers [1, p. 228].

Babin and Kim have been among the pioneers to introduce the multidimensional approach to service value into the tourism literature [2]. According to their opinion, the value of the tourism service is based on the utilitarian and hedonic dimension, i.e. it is not sufficient to offer the basic services to users, but it is rather necessary to also secure the pleasant experience during their usage. The multidimensional value perception within hotel and tourism industries is a very popular topic amongst the researchers today [22].

Several famous models for measuring service values in the hotel and tourism industry can be pointed out. Within the area of tourism, a five-dimensional model for measuring the value of tourism services has been developed. The model points out the following dimensions which tourists perceive as the key elements of tourism service values [10]: quality, efficiency, game, esthetics, social value.

The level of quality of tourism services and efficiency represent a part of the functional value dimension, while game and esthetics refer to the emotional part of the value. Game is perceived as a sense of pleasure and entertainment, while esthetics includes beauty perceived by tourists during service usage at certain tourist destinations.

In their study, Nasuton and Mavondo have developed a multidimensional model for measuring the value of hotel services. This model is focused on measuring the following three dimensions of service values [21]: price,

prestige and reputation. The stated three dimensions have been identified as the three critical dimensions of service offer value in hotel management, where prestige stands out as a significant part of the value of hotel service estimated by the users. Besides the services of greater quality which they are prepared to pay for, the users also wish for prestige enabled by the service usage of the precise hotel.

Within the area of tourism agency business, a six-dimensional model has been created to measure the service value, also known as the GLOVAL model. This model is oriented towards the following dimensions of tourism agency service value [24]: level of service quality, price, exterior and interior, staff competence, emotional value and social value. The authors point out that the six dimensions of value represent significant drivers of tourism agency service value, amongst which the key dimension is staff competence. The users of tourism agency services rely on employed staff during the estimate of total value. The users expect to be offered adequate information, to be well received, to have an adequate level of dedication and to be treated professionally by the employees in tourism agencies.

Within the area of services, it is worthy to point out another two multidimensional models, where one model is based on four key dimensions. These dimensions are [9]: functional, economic, emotional and social value dimension. Floh *et al.* have pointed out that one group of customers estimates the functional and economic dimension of values as the most important drivers, while the other group points out the value of all four components of service values.

The other model for measuring value of the service offer has six dimensions, where four dimensions refer to the value of services of functional nature (exterior/interior, service offer, staff competence, functional price value), while the two dimensions refer to emotional and social value [23]. Within these studies, the functional dimension encompasses convenience, external characteristics, quality of offered service and helpfulness of human resources. The service users also wish for status and social prestige enabled by the usage of such services. This refers to the social part of the value. Besides satisfying the basic and social benefits, the service users tend to satisfy the hedonic needs as well which derive from the experience in service usage (emotional value).

Research methodology

In order to measure the effects of the perceived value onto the loyalty of hotel and tourism agency users, an empirical research using the survey method has been implemented. The empirical research included hotels and tourism agencies doing business on the territory of the Republic of Serbia. Bearing in mind that two empirical studies have been carried out, one in the area of hotel management, and the other in the area of tourism agency management, the entire sample has been divided into two sub-samples. The research encompassed 154 users of hotel services and a total of 149 users of tourism agency services. The questionnaires have been forwarded to the hotels, whose management had accepted to cooperate with the authors of the paper, so the questionnaires were at the guest disposal during check out at the reception. When tourism agencies were concerned, just before the realized journey, the guides forwarded the questionnaires to the passengers.

Based on the relevant literature review [9] [23], a multidimensional concept of perceived value was chosen. The first part of the questionnaire encompassed 12 statements reflecting four dimensions of service offer value of the hotels and tourism agencies (functional, economic, emotional and social), where every dimension has been described by three statements. The other part of the questionnaire contained three statements referring to customer service loyalty, where two statements referred to user readiness to recommend and stimulate their friends and acquaintances to use a hotel/tourism agency service and one statement referred to the intention of the service user to continue using the agency/hotel service in the future as well. The statements for measuring loyalty have been taken from and adapted based on the review of a relevant foreign study [5]. The given statements were graded by the respondents on a seven-degree Likert scale who have expressed the level of accordance with them, where grade 1 stood for absolute disagreement with the given statement, while grade 7 stood for absolute agreement

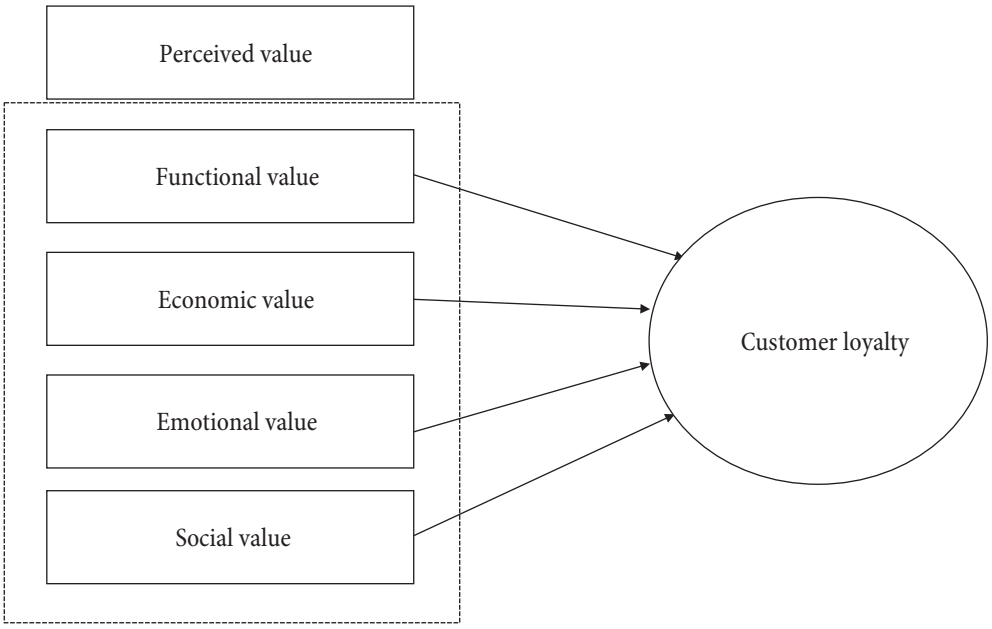
with the given statement. The grade of the hotel/tourism agency service offer value was based on the perception of the delivered service offer to the users. Figure 1 shows the suggested model for measuring value in hotel and tourism management.

The following statistical methods have been used for the analysis of the gathered primary data: the reliability analysis, the confirmatory factor analysis and the multiple regression analysis. The analysis of the gathered data has been implemented within the statistical package for social sciences SPSS 20 (*Statistical Package for the Social Sciences Ver. 20*) and AMOS 18 (Analysis of Moment Structures Ver. 18). The first step assumed the determination of the Cronbach's alpha coefficient value and the usage of the confirmatory factor analysis (CFA) in order to test the reliability, the concordance and validity of the formulated research model in both service areas. The implementation of the multiple regression analysis determined the effects of multidimensional perceived value of hotel and tourism agencies service offer onto the loyalty of service users. For that purpose, in order to identify the potential problem of multicollinearity, a Variance Inflation Factor (VIF) was tested.

The discussion of the obtained research results

Table 1 shows the values of the Cronbach's alpha coefficient which indicates the degree of reliability of individual variables, as well as the entire devised model for measuring the value of hotel service offer and the model for measuring the value of tourism agency service offer. The reliability analysis of five variables with two research models was necessary, since these variables are measured via a greater number of statements. Within the first model for measuring value of hotel services, all variables indicated high levels of Cronbach's alpha value and stood in the

Figure 1: The research model for measuring value and customer loyalty in hotel and tourism management



Source: Authors' illustration

Table 1: Variable reliability

Variable	Cronbach's alpha	
Functional value of the hotel/tourism agency service	0.832	0.771
Economic value of the hotel/tourism agency service	0.840	0.807
Emotional value of the hotel/tourism agency service	0.819	0.775
Social value of the hotel/tourism agency service	0.851	0.851
Customer loyalty	0.828	0.944

Source: Authors' calculations

interval between 0.819 (emotional dimension of the hotel service value) and 0.851 (social dimension of the hotel service value). For statements explaining the customer loyalty the Cronbach's alpha value was 0.828.

The value of the Cronbach's alpha coefficient for the other model stood in the interval between 0.771(functional value) and 0.994 (customer loyalty). Bearing in mind that the values of Cronbach's alpha coefficient were above 0.7 it was concluded that all variables had an adequate level of reliability. Besides the stated, the value of Cronbach's alpha coefficient for the entire model for measuring value of the service offer of the hotels was 0.863, while the value of Cronbach's alpha coefficient for the entire research model for measuring value of the service offer of the tourism agencies was 0.901. It was concluded that both models expressed a high level of reliability.

In order to measure the concordance and validity of the model in hotel companies and tourism agencies, the confirmatory factor analysis has been used. Table 2 shows the concordance indices which demonstrate the level of concordance of the set model: the $\chi 2/df$ ratio, GFI (Goodness of Fit Index), CFI (Comparative Fit Index) and SRMR (Standardized Root Mean Square Residual). The good model concordance assumes that the value of the $\chi 2/df$ ratio stands in the interval between 2 and 5, that the values of GFI and CFI indices be approximately near the threshold of 0.9, and the value of SRMR index lower than the threshold of 0.1. Based on the obtained results it can be stated that a solid level of concordance has been achieved in both tested models.

The multiple regression analysis has been implemented in order to determine the influence of independent variables (functional, economic, emotional and social value dimension) onto the loyalty of users of hotel services and loyalty of users of tourism agencies. Table 3 shows the results of the multiple regression analysis (dependent variable: loyalty of users of hotel services), while Table 4 shows the results of the multiple regression analysis, where the dependent variable is the loyalty of users of tourism agency services. The stated tables also show the values of VIF coefficient in order to examine the multicollinearity. Multicollinearity can represent a problem in research, if the value of VIF coefficient is higher than 5 [7].

Results of the analysis within Table 3 confirmed the statistically significant influence of two independent variables onto the customer loyalty:

- Emotional values of the hotel service offer (ß=0.514, t=6.755) and,
- Social values of the hotel service offer (ß=0.189, t=2.789).

The independent variables explained 56.4% of loyalty variability as a dependent variable. Regarding the values of the VIF coefficient which stood in the interval from 1.575 to 1.964 it was concluded that the issue of

Table 2: Level of concordance of the devised model for measuring value of the service offer of hotels and tourism agencies

Service organizations	Concordance indices			
	$\chi 2$ /df	GFI	CFI	SRMR
Hotel	3,28	0,85	0,90	0,07
Tourism agency	2,82	0,84	0,91	0,06

Source: Authors' calculations

Table 3: The results of the multiple regression analysis (dependent variable: customer loyalty of the hotel service)

Variable	ß	t	VIF
Functional value	0.078	1.024^{ns}	1.964
Economic value	0.098	1.356^{ns}	1.785
Emotional value	0.514	6.755**	1.977
Social value	0.189	2.789**	1.575

Results are significant at the level: 0.01 (**);
Results are not significant at the level: 0.05 (ns);
R^2=0.564
Source: Authors' calculations

multicollinearity does not appear in a greater degree. The results of the analysis confirmed that the perceived value of hotel service offer described using four variables has a partially significant influence onto the loyalty of service users.

Results of the regression analysis within Table 4 show that the two independent variables achieved statistically significant influence onto the dependent variable (customer loyalty of tourism agencies), at the significance level of 0.01:

- Economic value (ß= 0,344, t=1,356) and
- Social value (ß= 0,408, t=5,889)

It is worthy to mention that the independent variables explained 57.2% variability of the dependent variable. The values of VIF coefficient stood in the interval from 1.615 to 2.374. The obtained results of the regression analysis indicated that the perceived value of the service offer of the tourism agencies has a partially significant influence onto the loyalty of service users, i.e. the economic dimension and social dimension of the service offer value of tourism agencies achieve a statistically significant influence onto the loyalty of their users.

Conclusion

The devised model for measuring service value in hotel and tourism industries, based on previously tested models from foreign studies, completes and widens the theoretical basis of value, through the multidimensional perspective of the perceived value concept. The paper analysis also refers to the measurement of the effects of four key dimensions of value onto service customer loyalty. Two separate studies have been carried out within this paper in order to identify the key dimensions of service values (hotel service and tourism agency service) which make the strongest influence onto customer loyalty. By carrying out a comparative analysis of the multiple regression statistically significant influence of the following independent variables onto customer loyalty have been confirmed: emotional value of the service offer appears as the statistically most significant driver of hotel customer loyalty, while the social value of the service offer has demonstrated to be the strongest predictor of tourism agency customer loyalty, at the same time being an important determinant of hotel customer loyalty. When it comes to tourism agencies, the economic value of the service stands out as the statistically significant antecedent of customer loyalty. Precisely the specific concept of the research model and the comparative review of the results of the two independent studies give a specially value and originality to this paper research.

The general conclusion of the comparative review is that the perceived value of the service offer in service organizations (hotels and tourism agencies), described by using four variables (functional, economic, emotional and social) has a partly significant statistical influence onto customer loyalty, since within both service areas, two out of four value dimensions have been expressed. It is important to notice that the social dimension of value has expressed a significant influence onto user loyalty in both service areas. Based on the obtained regression results, managers of hotel companies and tourism agencies must become aware of the fact that it is needed to invest great efforts in order to create and deliver greater value to its users. In a market which is faced by constant competition, service organizations must work on non-material elements in order to offer their users greater value. First of all, they must work on additional elements of emotional and social values and creating a brand which influences very much the creation of loyalty of their users.

Table 4: The results of the multiple regression analysis (dependent variable: customer loyalty of the tourism agency)

Variable	ß	t	VIF
Functional value	0.083	1.134[ns]	1.808
Economic value	0.344	1.356**	2.374
Emotional value	0.053	0.658[ns]	2.141
Social value	0.408	5.889**	1.615

Results are significant at the level: 0.01 (**);
Results are not significant at the level: 0.05 (ns);
R^2=0.572
Source: Authors' calculations

Stressing the social value as an important antecedent of loyalty in both industries indicates that hotels and tourism agencies must use the advantages of marketing via social networks. In that sense, it is favorable that the satisfied users should be motivated to share contents on obtained service experience via social networks. As far as the younger population is concerned, engaging influencers, who are at the same time familiar with the mentioned services, can contribute to achieving positive business results and attracting new users. On-line forums should also be emphasized as the place where loyal users can express their positive impressions, but on-line forums also offer useful feedback to management regarding unsatisfied users, which is a good basis for eliminating the weak elements of the service offer. Since the economic dimension is also expressed as important in the tourism industry, it is useful to also devise adequate loyalty programs which would enable the users of the program price discounts, but at the same time offer the company management insight into user preferences when it comes to choosing the tourism packages. The results of the carried out research also indicate that hotels have to a greater extent compared to tourism agencies established an intangible emotional bond with their users.

An empirical research carried out within this paper refers to the industries of hotel and tourism management, so the results can not be generalized onto other service areas. It would be adequate for future studies to focus on other types of hospitality objects for accommodation (motels, hostels, apartments etc.) or other types of tourism agencies (receptive, initiative, combined etc.). It is also favorable for future studies to include foreign guests into a separate sample, and thus to compare the attitudes of domestic and foreign service users. Also, it is favorable to carry out an analysis by user segments, depending on their main socio-economic and demographic features.

Referencies

1. Aaker, D., Kumar, V., & Day, G. (2007). *Marketing reseach*. John Wiley & Sons, Inc., New York.
2. Babin, B. J., & Kim, K. (2001). International Students Travel Behavior: A Model of the Travel-Related Consumer/Dissatisfaction Process. *Journal of Travel and Tourism Marketing*, 10 (1), 93–106.
3. Dainiene, R., & Dagiliene, L. (2015). A TBL Approach based theoretical framework for measuring social innovations. *Procedia Social and Behavioral Sciences*, 213 (1), 275-280.
4. De Bonis H., Balinski E., & Allen P. (2002). *Value-based marketing for bottom-line success*. American marketing asociation, McGrow Hill, New York.
5. Deng, Z., Lu, Y., Wei, K. K., & Zhang, J. (2009). Understanding customer satisfaction and loyalty: An empirical study of mobile instant messages in China. *International Journal of Information Management*. 30 (4), 289-300.
6. Đurađević, M. (2017). Characteristics of wellness tourism users in „Merkur" Specialised Hospital. *Menadžment u hotelijerstvu i turizmu – Hotel and Tourism Management*, 5 (1), 75-84.
7. Field, A. (2000). *Discovering statistics using SPSS for Windows*. Thousand Oaks, USA: Sage PublicatioFiol,
8. Fiol, L. J. C., Tena, M. A. M., & García, J. S. (2011). Multidimensional perspective of perceived value in industrial clusters. *Journal of Business & Industrial Marketing*, 26 (2), 132-145.
9. Floh, A., Zauner, A., Koller, M., & Rusch, T. (2014). Customer segmentation using unobserved heterogeneity in the perceived-value–loyalty–intentions link. *Journal of Business Research*, 67 (5), 974–982.
10. Gallarza, M. G., & Gil, I. (2008). The concept of value and its dimensions: a tool for analysing tourism experiences. *Tourism Review*, 63 (3), 4-20.
11. Holbrook, M. (2007). *Consumer Value: A framework for analysis and research*. Taylor & Francis, New York.
12. Hu, H., Kundampully, J., & Juwaheer, D. T. (2009). Relationships and imapcts of service quality, perceived value, customer satisfaction, and image: an empirical study. *The Service Industries Journal*, 29 (2), 111-122.
13. Huber, F., Herrmann, F., & Morgan, R. E. (2001). Gaining competitive advantage through customer value oriented management. *Journal of Consumer Marketing*.,18 (1), 41-53.
14. Hutchinson, J., Lai, F., & Wang, Y. (2009). Understanding the relationships of quality, value, equity, satisfaction, and behavioral intentions among golf travelers. *Tourism Management*, 30 (2), 298-308.
15. Jiang, Y., & Kim, Y. (2015). Developing multi-dimensional green value: Extending Social Exchange Theory to explore customers' purchase intention in green hotels–evidence from Korea. *International Journal of Contemporary Hospitality Management*. 27 (2), 308 – 334.
16. Johnson, W., & Weinstein, A. (2004). *Superior customer value in the new economy: concepts and cases*. CRC Press, Boca Raton.
17. Keränen, J., & Jalkala, A. (2013). Towards a framework of customer value assessment in B2B markets: An exploratory study. *Industrial Marketing Management*, 42 (8), 1307-1317.
18. Lindgreen, A., & Wynstra, F. (2005). Value in business markets: what do we know? Where are we going?. *Industrial Marketing Management*, 34 (7), 732-748.
19. Maričić, B. & Đorđević, A. (2012). *Kreiranje i isporučivanje vrednosti potrošačima*. CID, Ekonomski fakultet, Beograd.
20. Milisavljević, M., Maričić, B., & Gligorijević, M. (2007). *Osnovi marketinga*. CID, Ekonomski fakultet, Beograd.
21. Nasution, H. N., & Mavondo. F. T. (2008). Customer value in the hotel industry: What managers believe they deliver and

what customer experience. *International Journal of Hospitality Management*, 27, 204–213.

22. Oh, H., & Kim, K. (2017). Customer satisfaction, service quality, and customer value: Years 2000-2015. *International Journal of Contemporary Hospitality Management*, 29 (1), 2-29.
23. Roig, J. C. F., Garcia, J. S., & Tena, M. A. M. (2009). Perceived value and customer loyalty in financial services. *The Service Industries Journal*, 29 (6), 775–789.
24. Sanchez, J., Callarisa, L., Rodriguez, R. M., & Moliner, M. A. (2006). Perceived value of the purchase of a tourism product. *Tourism Management*, 27 (3), 394-409.
25. Šurević, J., Đorđević, A., & Zečević, B. (2019). The identification of satisfaction drivers of vacation traveling tourists. *Ekonomika preduzeća*, 67 (7-8), 493-505.
26. Tan, L., & Xu, S. (2015). Research on the Mode of Enterprise Service Innovation in Micro Era. *International Journal of u-and e-Service, Science and Technology*, 8 (11), 199-210.
27. Ulaga, W., & Chacour, S. (2001). Measuring customer-perceived value in business markets: a prerequisite for marketing strategy development and implementation. *Industrial Marketing Management*, 30 (6), 525-540.
28. Voss C., Roth, A., & Chase, R. (2008). Experience, Service Operations Strategy, and Services as Destinaions: Foundations and Exploratory Investigation. *Production And Operations Management*, 17 (3), 247-266.
29. Wathne, K., Biong, H., & Heide, J. (2001). Choice of supplier in embedded markets: relationship and marketing program effects. *Journal of Marketing*, 65 (2), 54-66.
30. Williams, P., Soutar, G., Ashill, N., & Naumann, E. (2017). Value drivers and adventure tourism: A comparative analysis of Japanese and Western consumers. *Journal of Service Theory and Practice*, 27 (1), 102-122.

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ANALYSIS OF THE SYSTEMIC CREDIT RISK COMPONENT IN THE BANKING SECTOR OF THE REPUBLIC OF SERBIA

Analiza sistemske komponente kreditnog rizika u bankarskom sektoru Republike Srbije

Abstract

The subject of this research paper is quantification of the degree of systemic risk exposure of the Serbian banking sector's loan portfolio in the period from 2008Q4 to 2019Q3, including by main commercial segments (corporate and retail). The Basel Committee on Banking Supervision, under its regulatory framework, makes a distinction between corporate and retail loans regarding the exposure to systemic risk. Based on the above, the following hypotheses are set: a) There is a significant difference in systemic risk exposure between corporate and retail loans in the Serbian banking sector and b) Forecasting the exposure to systemic risk of the entire Serbian banking sector can be performed on the basis of corporate loans due to the specificity of the economic system of the Republic of Serbia. The results of the research corroborated the truthfulness of both hypotheses, which has a multifold significance for commercial banks' management, macroeconomic and macroprudential policy makers. First, banking and accounting regulations require stress-testing of probability of default on the change in macroeconomic aggregates and its impact on the bank's capital. Second, a bank's sensitivity to changes in macroeconomic aggregates predominantly depends on the loan portfolio structure by commercial segments. Third, the conclusion of the academic elite that the development of the capital market would lead to an increase in the macroeconomic stability of the Republic of Serbia and reduce the procyclicality of credit risk was confirmed. We used the autoregressive distributed lags model (ARDL model) because there is a difference in order of integration in the observed time series (I(0) and I(1)), and because this method provides good results for relatively small sample data sizes.

Keywords: *commercial banks, systemic risk, credit risk procyclicality, macroeconomic aggregates, financial system.*

Sažetak

Predmet ovog istraživanja je ispitivanje i kvantifikovanje stepena izloženosti sistemskom riziku kreditnog portfelja bankarskog sektora Republike Srbije u periodu od 2008Q4 do 2019Q3, ali i po osnovnim komercijalnim segmentima (privreda i stanovništvo). Bazelski komitet za superviziju banaka, u sklopu regulatornog okvira za utvrđivanje potrebnog nivoa kapitala, pravi razliku u izloženosti sistemskom riziku između kredita odobrenih privredi i kredita odobrenih stanovništvu. Na osnovu navedenog, postavljaju se sledeće hipoteze: a) Postoji značajna razlika u izloženosti sistemskom riziku između kredita odobrenih privredi i kredita odobrenih stanovništvu u bankarskom sektoru Republike Srbije i b) Predikcija izloženosti sistemskom riziku celog bankarskog sektora Republike Srbije može se vršiti na osnovu kredita odobrenih privredi zbog sprecifičnosti ekonomskog i bankarskog sistema Republike Srbije. Rezultati istraživanja su potvrdili istinitost tvrdnje obe hipoteze, što ima višestruki značaj za kreatore makroekonomske politike, nosioce makroprudencijalne politike i nosioce upravljačke funkcije poslovnih banaka. Prvo, bankarska i računovodstvena regulativa zahtevaju izradu stres-testova verovatnoće neizmirenja obaveza dužnika na promenu makroekonomskih agregata i njen uticaj na kapital banke, uvažavajući procikličnost finansijskog sistema. Drugo, osetljivost banke na promene u makroekonomskim agregatima dominantno zavisi od strukture kreditnog portfolia po komercijalnim segmentima. Treće, potvrđen je zaključak akademske elite da bi razvoj tržišta kapitala doveo do povećanja finansijske i makroekonomske stabilnosti Republike Srbije i smanjio procikličnost kreditnog rizika. Korišćen je model autoregresionih distributivnih docnji, tzv. ARDL model (engl. autoregressive distributed lags model), jer postoji razlika u integrisanosti posmatranih vremenskih serija (I(0) i I(1)) i jer ovaj metod daje dobre rezultate na relativno malim uzorcima.

Ključne reči: *poslovne banke, sistemski rizik, procikličnost kreditnog rizika, makroekonomski agregati, finansijski sistem.*

Introduction

Lending to the private sector (corporate and retail) is the main channel of financial intermediation which is the basis of economic growth of developing countries, but also a source of systemic risk [3, p. 2]. The lower the level of development of the financial system, the higher the share and importance of lending activity in the balance sheets of commercial banks, as it is almost the only way to provide external sources of financing for business entities. In such an enviroment, the stability of the financial system of an economy is directly related to the level of credit risk which commercial banks are exposed to based on their lending activity.

A decline in high-quality demand for loans and the increase in nonperforming loans (NPLs) that burden banks' financial statements (income statement and balance sheet) lead to stricter requirements for approving new loans. All this has a feedback effect in the form of further reduction in loan demand, resulting in a decrease in investment, consumption, economic growth and disposable income [28, p. 92]. The mentioned relationships indicate that there is an interaction between these variables and that it is very easy to enter a vicious circle. The analyses made by international financial institutions suggest that the NPLs ratio higher than 10% reduces lending activity by 4% (excluding secondary effects) [24, p. 1]. The lending activity is a prerequisite for economic growth and has a significant impact on economic growth rate.

Boumparis's research paper confirms that systemic factors have an impact on the creation of NPLs, but NPLs, in turn, affect the level of systemic risk. Using impulse response function, it has been confirmed that a one standard deviation shock to NPLs has an impact on the long-term sovereign rating in the next six years (an increase in NPLs leads to deterioration of long-term sovereign rating [7, p. 12]). Conversely, a one standard deviation shock to the sovereign rating has a statistically significant impact on NPLs over a 9-year period, while the strongest impact is reached after 3 years (the increase in NPLs leads to deterioration of the rating [7, p. 13]).

Anastasiou et al. [1, p. 14] have demonstrated that there is a statistically significant difference in sensitivity to deterioration of macroeconomic factors between the peripheral parts of Europe and the core countries of the European Union. The obtained result can be explained by different levels of economic development, but also by differences in the development and efficiency of a country's legal system. Koju et al. [16, p. 50] have shown that industrial development and exports are one of the most important factors in reducing credit risk in highly developed countries. The research by Nkusu [20, p. 18] has confirmed that the decline in economic activity, employment and asset prices contributes to the rise in NPLs in highly developed economies, but also that there is a strong feedback effect from NPLs to economic and lending activity, housing prices and the value of NPLs in the coming years [20, p. 19].

Given the comprehensiveness of their effects, credit risk factors can be divided into two main groups: systemic and specific (idiosyncratic) [28, p. 91]. Irrespective of the factors, there are two macroeconomic scenarios that can trigger the formation of NPLs [6, p. 7]. The first is a slow, but continuous deterioration in asset quality due to an extended period of weak growth (the example of Portugal and Italy). The second scenario is the occurrence of a sudden economic shock to asset quality in the context of a highly indebted financial sector that experienced a rapid growth. In this case, banks are vulnerable to sudden turns in market conditions, particularly if they have mismatched financing structures or the collateral value is significantly overestimated (the case of Ireland and Spain). The vulnerability of the financial system to shocks in macroeconomic aggregates can also be caused by structural weaknesses such as the excess of banks, financial innovation (securitisation of mortgage loans) and the lack of the banks' operational capacity to write off NPLs [6, p. 8].

Due to its importance, the analysis of credit risk determinants has been in the focus of professional literature for years. Knowledge of the factors that affect the level of NLPs is crucial for managers in a risk function in banks, national and international regulators and supervisors responsible for the stability of the banking sector [25, p. 3].

Literature review

The examination of the causality between the credit risk levels in the Serbian banking sector, on the one hand, and the basic macroeconomic aggregates, on the other hand, has been the subject of a number of scientific research papers. Interest in these issues has escalated particularly since 2014, when the share of NPLs in total gross loans reached its historical maximum of 23% vs. 11.2% in 2008. In August 2015, the Government of the Republic of Serbia adopted a strategy for resolution of nonperforming loans. Achieving macroeconomic stability is a necessary albeit not a sufficient condition for the permanent resolution of accumulated NPLs from the previous period. A systemic approach applied simultaneously and in a coordinated manner by commercial banks, the government and the central bank is needed [28, p. 92].

The most significant research studies by domestic authors will be listed in a chronological order. Božović, Živković and Urošević [8, p. 32] analyse the effect of spillover of the exchange rate risk into default risk, using the Merton model to show that in an import-dependent country there is a significant impact of exchange rate devaluation on the borrowers' ability to timely service their obligations. Otašević [22, p. 28] analyses the influence of macroeconomic factors on credit risk in the banking sector in the period from 2008Q3 to 2012Q2 on a sample of 33 commercial banks. Econometric analysis indicates that the statistically most significant factors behind the rising credit risk are the fall in economic activity and depreciation of the dinar. In Jović's doctoral dissertation, [14, p. 196], GDP and the nominal exchange rate of the euro were found to have statistically significant impact on the movement of NPLs in the economy. A forecast error variance decomposition analysis showed that 67.5% of the variability of NPLs can be explained by changes in GDP, the nominal exchange rate of the dinar against the euro and the unemployment rate.

Tabaković [28, pp. 91-105] provides a detailed analysis of the causes of NPLs in the Serbian banking sector, as well as an overview of all the measures that have led to a successful long-term solution to this problem. In her paper [27, pp. 83-102], Tabaković presents a thorough analysis of all monetary policy measures taken in the period following 2012 with a view to achieving price and financial stability, which was a prerequisite for a successful recovery of investment and economic activity. The conclusion is that an efficient monetary policy supported by other macroeconomic policy measures (primarily fiscal consolidation measures) is one of the conditions for reaching financial stability and economic growth.

In Božović's paper [9, p. 12], credit risk is for the first time approximated by the default rate at the level of the Serbian banking sector. Based on the conducted research, the author came to the conclusion that statistically significant predictors of change in the default rate are its fourth lag (negative sign), NBS key rate (positive sign) and GDP growth rate (negative sign).

In addition to the research papers by domestic authors focusing on the analysis of credit risk determinants in the Serbian banking sector, the authors in the surrounding countries have also dealt with this issue. Under the influence of the global economic crisis, the level of NPLs recorded the highest average annual growth rate in 2009 in all countries of Central, Eastern and Southeast Europe [26, p. 50].

Kjosevski, Petkovski and Naumovska [15, p. 1185] have analysed specific and macroeconomic determinants of NPLs in the Republic of North Macedonia using ARDL methods. The results of this research indicate that the profitability of banks, growth of corporate and retail loans as well as GDP growth have an adverse impact on NPLs, while the increased banking sector solvency and unemployment rates have a positive impact on NPLs expansion in both models. Aver [2, p. 317] has studied credit risk factors in the banking sector of Slovenia. The model explains 86.3% of the credit risk variability of the Slovenian banking sector. The growth of real interest rates on consumer loans granted to households, the growth of stock exchange index of the Slovenian capital market, the reduction of the number of employees in Slovenia, the increasing interest rates on government bonds and on mortgage loans have the most significant impact on credit risk growth. Using the ARDL method, Benazić and Radin [5, p. 75] have confirmed a statistically significant long-run equilibrium relationship between real GDP growth, price growth, unemployment, interest rates and

the depreciation of Croatian kuna against the euro and NPLs in the Croatian banking sector. Tanasković and Jandrić [26, p. 58] have analysed the macroeconomic and institutional determinants of NPLs in the period from 2006 through 2013, on a sample of 12 countries in Southeast Europe. It has been found that the movement of GDP adversely impacts the movement of NPLs, while the share of foreign currency-indexed loans in total loans and the depreciation of the local currency have a positive impact on NPLs. Szarowska, in her study [25, p. 33], analyzed macroeconomic determinants of NPLs in the period from 1999 through 2015 in the countries of Central and Eastern Europe. The author used panel regression analysis with fixed effects, finding unemployment rate to have the strongest effect on the level of NPLs (an increase in the unemployment rate by 1pp leads to an increase in NPLs ratio by 0.54pp). Economic growth, nominal exchange rate, inflation and interest rate on loans also have a statistically significant impact.

Bykova and Pindyuk [10, p. 6] have analysed the determinants of NPLs in Central and Southeast Europe using a panel model with fixed effects. The dependent variable was segmented so as to allow for a separate observation of the change in NPLs in four segments: corporate loans, mortgage loans, consumer loans and cash loans to households. The model showed a statistically significant impact of real GDP growth on all segments of NPLs, but the relationship is the strongest in the corporate sector, which corresponds to both the economic intuition and economic theory. Within the retail sector, mortgage loans have the highest degree of procyclicality, which also corresponds to the economic logic. Using a dynamic panel and a sample of 75 countries, Beck et al. [4, p. 525] have found that good predictors of NPLs are real GDP rate, stock price, exchange rate and lending interest rate. Ozili [23, p. 27] has analysed the impact of the degree of development of the banking and financial sector on the total level of NPLs. Data at the level of 96 countries and 6 regional units have been analysed. Indicators of the banking sector development level are the presence of foreign banks (the degree of liberalisation of the banking sector) and private credit by banks to GDP ratio as an indicator of the degree of financial intermediation. It has been determined that NPLs are positively correlated with the high share of the banking sector in the total external financing and with the liberalisation of the banking sector, i.e., with significant presence of foreign banks. Boumparis et al. [9, p. 12] have analysed the mutual impact of sovereign ratings and NPLs in the panel vector autoregressive model (PVAR model). The application of the impulse response function has shown that there is an interaction between NPLs and the long-term sovereign rating.

Data

In this paper, we used data on the main macroeconomic indicators which are available on the website of the National Bank of Serbia (secondary source of data). The sample covers the period of 11 years (2008Q4-2018Q3), and time series consist of quarterly data. The Decision on Classification of Bank Balance Sheet Assets and Off-Balance Sheet Items [21, p. 1] gives a precise definition of nonperforming loans. For the purpose of this research, credit risk (dependent variable) is approximated by the level of total NPLs, in millions of dinars. In the literature, nonperforming loans, their level [14, p. 111], their share in total gross loans [15, p. 1189, 25, p. 26], the logarithmic transformation of their share in total gross loans [26, p. 55] or the first difference of their share in the total gross loans [10, p. 23] are usually used as an indicator of the credit risk level which the banking sector is exposed to. In accordance with the results obtained in previous research, the following macroeconomic variables were used as explanatory variables: seasonally adjusted GDP in millions of dinars, nominal dinar exchange rate against the euro (exchange rate at the end of the period), key interest rate of the National Bank of Serbia, the risk premium of the Republic of Serbia measured by EMBI index (emerging market bond index prepared by JP Morgan) and year-on-year inflation rate. Table 1 below displays the descriptive statistics of all observed variables.

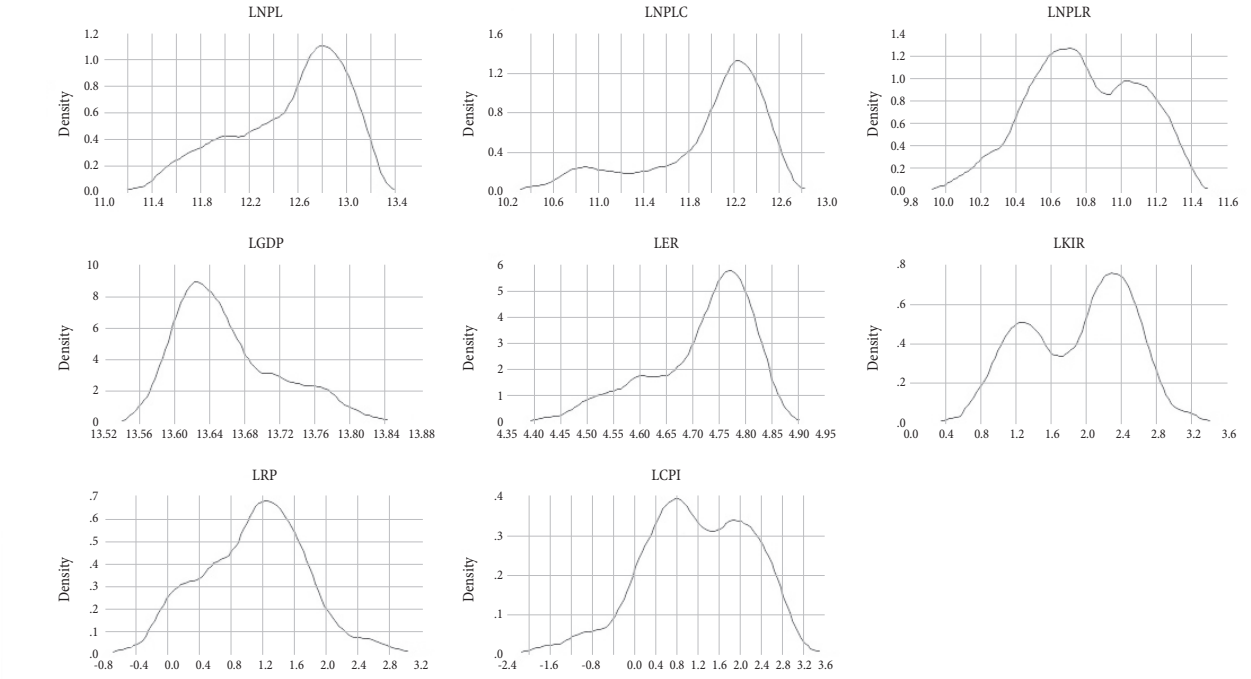
A logarithmic transformation (Box-Cox transformation) [19, p. 25] of time series of all observed variables was performed. This further means that the initial estimated regression at the level of time series represents the estimation of constant elasticity [19, p. 26]. For variables

Figure 1: Descriptive statistics

	LNPL	LNPLC	LNPLR	LGDP	LER	LKIR	LRP	LCPI
Mean	12.54757	12.00512	10.79495	13.66034	4.721188	1.925950	1.103747	1.215391
Median	12.71124	12.19998	10.76557	13.64113	4.751889	2.151695	1.143492	1.163151
Maxlmum	12.99102	12.48518	11.22696	13.79576	4.820023	2.876386	2.504746	2.646175
Minimum	11.62953	10.68329	10.19809	13.59131	4.484143	0.916291	-0.105361	-1.203973
Std. Dev.	0.423569	0.488384	0.289264	0.054358	0.089433	0.557767	0.599281	0.926077
Skewness	-0.791199	-1.365710	-0.075408	0.897320	-1.062579	-0.300393	-0.060855	-0.357738
Kurtosis	2.301543	3.736615	2.041905	2.812787	3.035413	1.681819	2.555350	2.554907
Jarque-Bera	5.485010	14.67264	1.724600	5.968939	8.282182	3.847334	0.389633	1.301689
Probability	0.064409	0.000651	0.422190	0.050566	0.015905	0.146070	0.822986	0.521605
Sum	552.0931	528.2252	474.9778	601.0550	207.7323	84.74179	48.56486	53.47721
Sum Sq. Dev.	7.714661	10.25633	3.597978	0.127056	0.343927	13.37746	15.44290	36.87761
Observations	44	44	44	44	44	44	44	44

Source: Author's calculations.

Figure 2: Empirical distribution of observed time series



Source: Author's calculations.

in which another transformation was performed using the first difference operator in order to achieve time series stationarity, the transformed data represent a continuous growth rate [19, p. 27]. These two conclusions are relevant to the interpretation of the results obtained here.

Model specification

Three basic models in the form of a linear regression model have been developed in order to individually analyse the exposure to systemic risk at the level of the entire banking sector in Serbia, and then separately by individual segments, i.e., at the corporate and retail levels. All three models are illustrated in the text below. All details and EViews programme extracts are shown in Appendix 3. The research results section contains a comparative overview of all three models in terms of: **a.** level of significance at which the existence of cointegration was adopted (F-statistic), **b.** explanatory power of ARDL model with error correction (corrected coefficient of

determination) **c.** adjustment parameter values and **d.** statistically significant long-run regressors (regression coefficient value, standard error and p value). As with the Engle-Granger two-step procedure, the ARDL method can also be used to identify a single cointegration relationship, while using the Johansen method it is possible to identify multiple cointegration vectors.

Model 1

$$LNPL_t = \beta_0 + \beta_1 (LGDP)_t + \beta_2 (LER)_t + \beta_3 (LKIR)_t + \beta_4 (LRP)_t + \beta_5 (LCPI)_t + \varepsilon_t \quad (1.1)$$

Model 2

$$LNPLC_t = \beta_0 + \beta_1 (LGDP)_t + \beta_2 (LER)_t + \beta_3 (LKIR)_t + \beta_4 (LRP)_t + \beta_5 (LCPI)_t + \varepsilon_t \quad (1.2)$$

Model 3

$$LNPLR_t = \beta_0 + \beta_1 (LGDP)_t + \beta_2 (LER)_t + \beta_3 (LKIR)_t + \beta_4 (LRP)_t + \beta_5 (LCPI)_t + \varepsilon_t \quad (1.3)$$

where the variables have the following meaning: LNPL – logarithmic values of the level of NPLs across the entire banking sector, LNPLC – logarithmic values of the level of NPLs in the corporate sector, LNPLR – logarithmic values of the level of NPLs in the retail sector, LGDP – logarithmic values of seasonally adjusted GDP, LER – logarithmic values of the nominal exchange rate of the dinar against the euro, LKIR –logarithmic values of the key interest rate of the National Bank of Serbia, LRP – logarithmic values of the risk premium of the Republic of Serbia, and LCPI – logarithmic values of the year-on-year inflation rate.

Unit root test

In this paper, the subject of the analysis are time series, hence, before deciding which methodology to apply, it is necessary to determine how many times it is necessary to apply differentiation in order to eliminate the presence of one or more unit roots. By applying the ordinary least squares method in a regression model of time series with a unit root, we obtain parameter estimates with undesirable statistical properties. The classical linear regression model does not represent a completely adequate framework for the analysis of the interdependence of time series with a unit root [19, p. 159]. By looking at the observed time series chart, we can see a change in movement in the observed period (2008Q4-2019Q3) in all of them, which can be characterized as a permanent change in the movement of time series (existence of permanent structural break). The Chow test for determining a structural break was also applied in order to verify the conclusions made on the basis of the graphical representation of the series (details are shown in Appendix 2). This phenomenon can be explained by the fact that the period observed here was long enough to cover the moment of the initial effect of the global financial crisis on the Serbian economy, its delayed effects, given that economic time series are characterized by delays in responding to the initial impulse, as well as the recovery period of the Serbian economy and the financial system.

Unfavourable macroeconomic environment (decline in economic activity, depreciation of the dinar exceeding 22% in the period from 2009-2012 and the unemployment growth of around 10 percentage points) is the main trigger for a sharp hike in NPLs [28, p. 94]. In 2015, a strategy for solving NPLs issue was adotped, bringing down the levels of nonperforming loans as a result of the systemic approach applied to their resolution. Nonperforming loans granted to the retail sector follow the trend of NPLs in the corporate segment and at the level of the entire banking sector; however, their upward movement is much slower,

Table 1: Comparative overview of the share of NPLs in total loans at the level of the entire banking sector, in the corporate sector and in the retail sector

	2008Q4	2015Q3	2019Q3
NPLs to total gross loans ratio in the banking sector	11.30%	22.80%	4.70%
Corporate NPLs to gross loans ratio in the corporate segment	14.60%	24.10%	3.70%
Retail NPLs to gross loans ratio in the retail segment	7.30%	11.10%	4.10%
Corporate NPLs to total NPLs ratio	71.00%	56.00%	39.00%
Retail NPLs to total NPLs ratio	21.00%	17.00%	35.00%

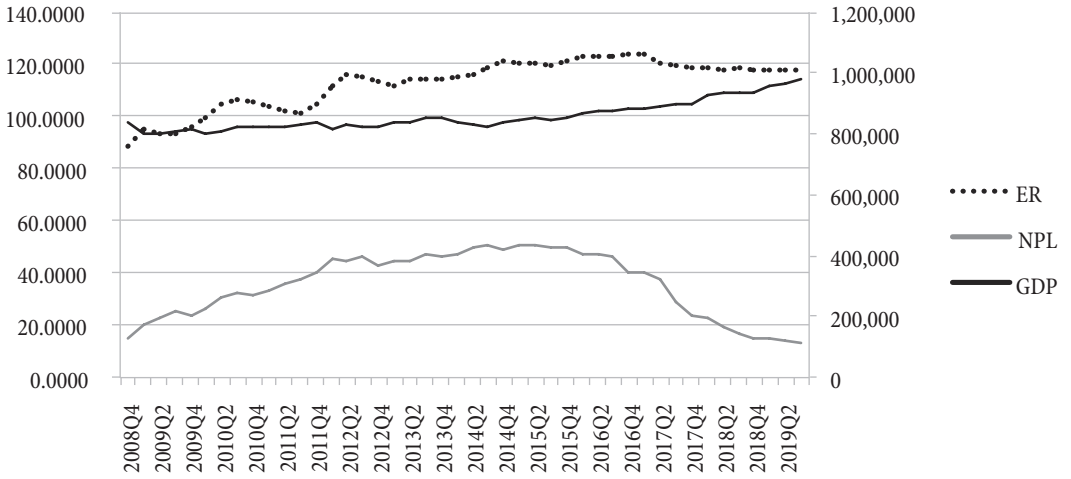
Source: Author's calculations.

resulting in their maximum share in total NPLs during the crisis at 17%. This very data, coupled with the fact that the share of retail NPLs in total NPLs at the level of the entire banking sector increased during 2019 (35%) corroborates the initial hypothesis that there is a difference in systemic risk exposure between the loans granted to the corporate sector and loans granted to the retail sector, i.e., that the degree of procyclicality of retail loans is lower in respect to the corporate loans.

When it comes to GDP series, in the observed period the value of GDP recorded its minimum in the second quarter of 2014 (negative rate of 4.02%), which is partly due to the floods that caused a one-time fall in industrial producton and mining. Negative GDP growth rates were recorded both in 2009, as a consequence of the first impact of the global financial crisis on the Serbian economy, and in 2012, as a consequence of the drought that caused a decline in agricultural production and grain exports. After reaching its minimum in 2014, it is noticeable that the economy has entered a new business and investment cycle, which reflected positively on the lending activity which, in turn, contributed to the growth of investment activity and GDP [28, p. 92].

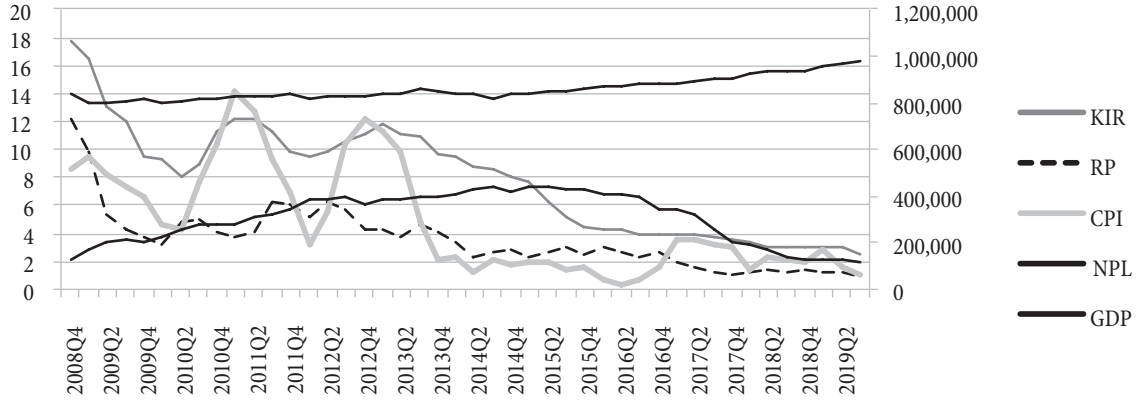
The series showing the movement of the nominal exchange rate has a permanent structural break in the second quarter of 2014. Since then, the nominal exchange rate growth has slowed significantly as a result of a stable monetary policy (falling inflation rate), growing economic activity, reduction in the balance of payments deficit and fiscal consolidation measures (reduction of the public budget deficit and reduction of foreign currency-indexed public debt). In the observed period,

Figure 3: Movement of the nominal exchange rate of the dinar against the euro (left-hand scale), NPLs and GDP in millions of dinars (right-hand scale) in the period from 2014Q4 to 2019Q3



Source: Author's calculations based on NBS data.

Figure 4: Key interest rate, Serbia's risk premium and year-on-year inflation rate (left-hand scale) and GDP and NPLs in millions of dinars (right-hand scale) in the period from 2008Q4 to 2019Q3



Source: Author's calculations based on NBS data.

the exchange rate was the subject of intervention by the monetary authorities aimed at preventing significant fluctuations in the exchange rate, ensuring the stability of the monetary and financial system, but also ensuring price stability [19, p. 33].

The structural break in the trend and the intercept of the time series of the key interest rate occurred in the first quarter of 2015 when there was a significant decline in the value of the key interest rate as a result of a longer period which did not see a sharp increase in year-on-year inflation rate [28, p. 96]. The growth of economic activity, keeping inflation within the target range and the beginning of fiscal consolidation measures significantly reduced inflation expectations and enabled monetary policy makers to reduce the key interest rate and encourage the growth of lending activity.

The series of Serbia's risk premium does not have a monotonous decline in the observed period, but it does have a negative trend which is in line with the improvement of the macroeconomic position of Serbia. The level of risk perception of investors towards investing in Serbia occurs with a certain time lag in respect of the improvement of the macroeconomic environment. A permanent structural break in the year-on-year inflation rate series occurred in the second quarter of 2013, because the same fell from 12.9% in October 2012 to 2.2% a year later [28, p. 96]. The year-on-year inflation rate was close to its maximum level in the fourth quarter of 2012 (12.2%) as a result of the increase in regulated prices, rising VAT rates that caused an increase in prices of a large number of products and services, and as a result of drought and high agricultural products' prices. After that period, it fell sharply to only 2.2% in the fourth quarter of 2013. Due to all the above, there were clear indications that all time series had a permanent structural break. In the case of a permanent structural break in trend stationary time series, the DF unit root test is biased towards accepting the hypothesis of the existence of a unit root [21, p. 224]. The literature defines a group of unit root tests that include a priori information about the existence of a permanent structural break. A modified version of the ADF test for series with structural break was applied here. With this version of the test, it is not necessary to know the moment of structural break a priori. A form of the test which assumes the occurrence of a structural break both in the intercept and in the trend of the time series was applied. In this case, the **null hypothesis** reads: the time series is a random walk with constant increment. The **alternative hypothesis** is defined as follows: the time series is stationary around a trend with a permanent change in its intercept and slope starting at TL+1. To test the existence of a unit root at the series level, two unit root tests were applied: the ADF test and a modified ADF test for series with structural break. In series in which both tests unambiguously adopted the null hypothesis of the existence of a unit root at the series level, testing of the first difference continued with the ADF test, because this test allows for drawing correct inferences when there is a single structural break (if there is a permanent structural break at the series level, by applying the first difference operator the same is transformed into a single structural break). Critical values for both unit root tests were determined at a significance level of 5%, and this significance level will be used for statistical inference within the research presented here.

Table 2: Unit root tests results

	Modified ADF test		Augmented Dickey Fuller Test-ADF			
	At the level		At the level		First difference	
Determinants	t-Statistic	critical value 5%	t-Statistic	critical value 5%	t-Statistic	critical value 5%
LNPL	-4.26	-5.17	-1.85	-2.93	-2.16	-1.94
LNPLC	-4.81	-5.17	-1.34	-3.51	-4.81	-2.93
LNPLR	-5.76	-5.17	-0.64	-3.51	-3.77	-2.93
LGDP	-6.75	-5.17	-2.26	-3.51	-7.75	-2.93
LER	-4.14	-5.17	-1.40	-3.51	-4.47	-2.93
LKIR	-6.07	-5.17	-1.57	-3.51	-4.09	-2.93
LRP			-2.96	-3.51	-5.70	-2.93
LCPI	-4.43	-4.44	-3.11	-3.51	-5.08	-2.93

Source: Author's calculations.

Using the abovementioned tests (the results are shown in Table 3 below), it was determined that the time series of GDP, NPLR (nonperforming loans in the retail sector) and KIR (key interest rate) were stationary (I (0)) around a trend with a permanent change in its intercept and slope starting at TL+1. All other time series are integrated of order one (I (1)). This is why, for these time series, the modified ADF test for series with structural break and ADF test give different results at the time series level. This phenomenon has already been explained in the text above.

Applied methodology

In accordance with obtained unit root test results, it is clear that the observed time series are not integrated of the same order (I(0)) and I(1)), thus it is not possible to apply the Engle-Granger two-step procedure (Engle & Granger, 1987) and Johansen method of cointegration (Johansen & Juselius, 1990) for determining long-run correlations in the movement of NPLs and other explanatory variables. The application of the mentioned methods requires that all observed time series be integrated of order one (I(1)). The autoregressive distributed lags method (ARDL method) represents an appropriate methodological framework for cointegration when the observed time series do not have the same order of integration (Pesaran and Pesraran (1997)). Its application requires that none of the observed time series be integrated of order I(2) (Ouattara (2004)). In this research, the mentioned requirements have been met. Moreover, this methodological framework gives better results on smaller samples, from 30 to 80 observations (Pattichis, 1999; Mah, 2000) compared to other methods for determining cointegration. The model with error correction can be obtained by linear transformation of the ARDL model, which can be represented by the following formula:

$$\Delta y_t = \beta_0 + \sum_{j=0}^{p} \beta_i \Delta y_{t-i} + \sum_{j=0}^{p} \beta_j \Delta x_{t-j} + \lambda_1 y_{t-1} + \lambda_2 x_{t-1} + \varepsilon_t$$

where y is a dependent variable, x are independent, i.e., explanatory variables, β are the coefficients of short-run dynamics, λ are coefficients of long-run dynamics and ε_t is a random error. The first part of the model describes short-run dynamics, while the second part of the model shows the long-run correlation between the dependent variable and explanatory variables in the model. Before applying the ARDL model, the key question is how many lags should be included in the model. The decision on the optimal number of lags is made on the basis of information criteria and provided the conditions for a good model specification have been met (residuals have normal distribution, there is no autocorrelation between residuals, and residuals have constant variance, i.e., there is no heteroscedasticity).

Research results

The selection of the optimal number of lags in all three models was performed by applying the Akaike information criterion. In choosing the optimal number of lags, we started with two lags due to the large number of independent variables. All three models have satisfied the basic criteria for a good model specification: the residuals have a normal distribution, the residuals have a constant variance, and there is no autocorrelation between them. Specification tests for all three models are shown in Table 4 below.

The next step is to test the existence of cointegration, i.e., the long-run equilibrium relationship between variables

Table 3: Model specification tests and information criterion value

Model specification test and information criteria	Model 1	Model 2	Model 3
Number of time lags	ARDL (1,0,0,0,0,0)	ARDL (1,0,0,0,1,0)	ARDL (1,0,0,1,1,2)
Akaike information criteria	-2.93	-2.45	-3.23
Diagnostic tests	Model 1	Model 2	Model 3
	p value		
JB (Jarque-Bera) test	0.55	0.06	0.80
Breusch-Godfrey Serial Correlation LM test	0.1	0.33	0.10
Heteroskedasticity test: Breusch-Pagan-Godfrey	0.06	0.36	0.20

Source: Author's calculations.

in the model. Statistical inference is performed by applying a bounds test, where the null hypothesis is based on the claim that there is no long-run relationship between the observed variables. If the F-statistic is higher than the upper bound value, which is given for the variables that are stationary at the first difference (I (1)), then the claim of the null hypothesis is rejected and an alternative hypothesis is adopted, which in the context of this test implies the existence of statistically significant long-run equilibrium relationship between the observed variables. The upper bound value is given for all four significance levels: 10%, 5%, 2.5% and 1%. For all models, the value of F-test and the bound values are shown in Table 5 below.

Based on the value of F-statistic that was higher than the upper bounds test value in all three models, the null hypothesis was rejected and the alternative hypothesis of the existence of statistically significant long-run equilibrium relationship between the observed variables was adopted. The alternative hypothesis in all models was adopted at a significance level of 1%.

In the models in which the movement of NPLs was assessed at the level of the entire banking sector and in the corporate sector, there is a statistically significant long-term impact of GDP (denoted as LGDP). The impact of GDP on the movement of NPLs in the retail segment is not statistically significant, which is in line with the conclusions already made on the basis of the given time series chart. Based on the obtained results, we can conclude that the procyclicality of NPLs in the corporate segment is higher than at the level of the entire banking sector (the value of the regression coefficient with GDP is higher in the corporate segment compared to the entire banking sector), and that procyclicality of NPLs in the retail sector is not statistically significant, at least when it comes to the impact of GDP thereon.

In the long run, the growth of GDP by 1% leads to a decline in NPLs at the level of the entire banking sector and in the corporate segment by 4.94% and 6.78% respectively, other things being equal. The relationship between the observed variables is negative (with a negative sign), which is in line with the results of previous research and with economic theory. The growth of the business activity increases the creditworthiness of borrowers and reduces the amount of NPLs, i.e., credit risk level.

The impact of the nominal exchange rate on NPLs is statistically significant in all three models. In the long run, a decrease in the nominal exchange rate by 1 % (appreciation of 1%) leads to a fall in NPLs by 2.97% at the level of the entire banking sector, by 2.37% in the corporate segment and by 2.66% in the retail segment, other things being equal. The relationship between the observed variables is positive. The growth of the nominal exchange rate increases the foreign currency-indexed loan instalment and leads to a reduced creditworthiness of borrowers. In economies like ours, this effect is particularly pronounced because there is a high share of foreign currency loans in the total loan portfolio. The main reasons for the high degree of euroisation of the Serbian economy in the observed period are: low level of confidence in domestic currency, lower interest rates on euro-denominated loans, lack of

Table 4: Bounds test results

	Model 1		Model 2		Model 3	
F-statistic	18.12		13.62		8.58	
k	5		5		5	
Critical values Bounds test	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
10%	2.26	3.35	2.26	3.35	2.26	3.35
5%	2.62	3.79	2.62	3.79	2.62	3.79
2.5%	2.96	4.18	2.96	4.18	2.96	4.18
1%	3.41	4.68	3.41	4.68	3.41	4.68

Source: Author's calculations.

Table 5: Long-run correlation coefficients

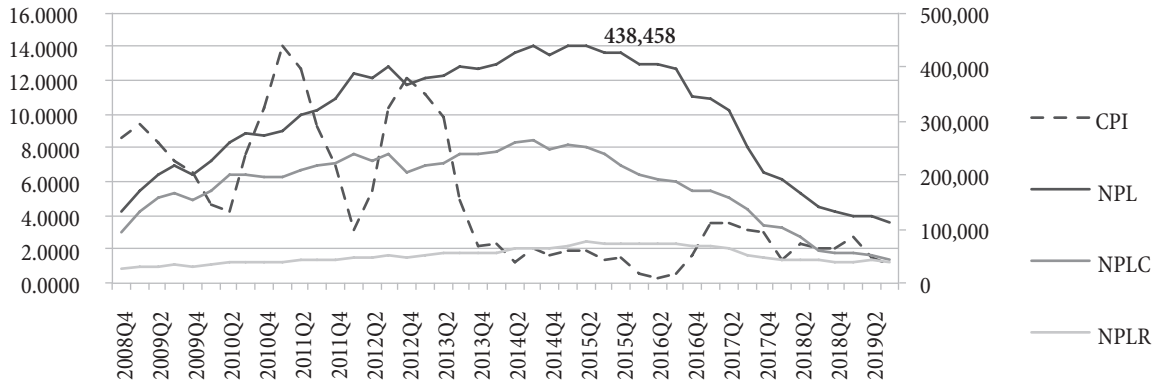
Determinants	LGDP			LER			LKIR			LRP			LCP		
Model	coeficient	standard error	p value	coeficient	standard error	p value	coeficient	standard error	p value	coeficient	standard error	p value	coeficient	standard error	p value
Model 1 LNPL	-4.94	1.97	0.01	2.97	0.94	0.00	0.58	0.26	0.03	0.39	0.19	0.05	-0.22	0.09	0.01
Model 2 LNPLC	-6.78	1.71	0.00	2.37	0.73	0.00	0.81	0.24	0.00	0.11	0.16	0.47	-0.17	0.06	0.01
Model 3 LNPLR	0.14	1,50	0.92	2.66	0.60	0.00	0.58	0.22	0.01	0.07	0.11	0.52	-0.25	0.07	0.00

Source: Author's calculations.

acceptable sources of financing in domestic currency when it comes to medium and long-term financing, the dominant presence of foreign banks and low credibility of the macroeconomic policy makers in the previous periods [13, p. 203]. Based on conducted econometric research Lojanica [18, p. 14] confirmed that the exchange rate is the most important transmission channel in Serbia, whose influence is not limited to the monetary sphere only (price stability), but also contributes to the economic growth. The variance decomposition of the consumer price index established that the effects of the exchange rate after four years accounted for 45% of total price fluctuations [18, p. 28]. The impact of the key interest rate of the National Bank of Serbia on nonperforming loans is statistically significant in all three models. Slope coefficient with the key interest rate which shows long-run correlation in the models can be interpreted as follows: **in the long run, a 1% drop in the key interest rate leads to a 0.58% drop in nonperforming loans at the level of the entire banking sector and in the retail segment, and to a 0.81% drop in the corporate segment, other things being equa**l. The relationship between the observed variables is positive. The growth of the key interest rate increases the costs of borrowing by commercial banks with the National Bank of Serbia and on the interbank market. Increased borrowing costs are incorporated into lending interest rates on corporate and retail loans, which reduces the borrowers' repayment capacity. The transmission of the key interest rate to interest rates on loans depends on many factors, including the loan maturity [4, p. 548]. Due to the low dinarisation rate of our economy, the interest rate channel as one of the classic instruments of monetary policy does not have the impact that it has in developed economies of the world [20, p. 30]. The impact of the risk premium of the Republic of Serbia is not statistically significant in all three models, but in the model used to assess the movement of nonperforming loans at the level of the entire banking sector (model 1), the regression coefficient with the risk premium cannot be completely ignored, because the p value equals 0.05. The slope coefficient with Serbia's risk premium in the model showing long-run correlation can be interpreted as follows: **in the long run, a 1% drop in the risk premium leads to a 0.39% drop in nonperforming loans at the level of the entire banking sector, other things being equa**l. Its decline indicates a decline in risk and an increase in macroeconomic stability, resulting in a fall in nonperforming loans.

The impact of the year-on-year inflation rate in all three models is statistically significant. The slope coefficient with year-on-year inflation rate which shows long-run correlation in the models can be interpreted as follows: **in the long run, a 1% year-on-year inflation rate increase leads to a 0.22% drop in nonperforming loans at the level of the entire banking sector, 0.17% drop in the corporate sector and 0.25% drop in the retail segment, other things being equal**. The relationship between the observed variables is negative, which is not in line with the economic theory. The obtained result is a consequence of the specifics of Serbia's economic system. First, the low level of dinarisation of the Serbian economy (both deposits

Figure 5: Movement of the year-on-year inflation rate, nonperforming loans at the level of the entire banking sector, in corporate and retail sectors in the period (in millions of dinars) from 2008Q4 to 2019Q3



Source: Author's calculations based on NBS data.

and loans) prevents the following expected impact: a rise in inflation should cause rising lending interest rates, which increases the credit risk level. Second, a rise in inflation devalues the real value of the borrowers' obligations and affects the creation of the so-called debtors' gain and credit risk mitigation. Third, the absence of expected price impact on the exchange rate, and subsequently on the credit risk level, resulted in the price increase which led to devaluation of the dinar, and the latter to a decline in creditworthiness of the borrowers, i.e., to the growth of NPLs. This missing influence is owed to the import dependence of the Serbian economy and its high euroisation level, where the exchange rate has a significant impact on prices. Analysis of time series using the VAR model (daily data from 2 January 2009 through 31 October 2019) found that the depreciation of the dinar against the euro of 1% leads to a rise in prices by 0.76%, while the rise in prices in the euro area by 1% leads to an increase in prices in Serbia by 2.09% [17, p. 26]. Fourth and last, both observed variables (NPLs and y-o-y inflation rate) were subject to government intervention in the observed period so that their movement cannot be directly related. The chart shows that the year-on-year inflation rate recorded alternating periods of sharp hike and fall up to the second quarter of 2015, while nonperforming loans recorded only continuous growth.

The analysis continued with a focus on coefficients showing short-run dynamics, including adjustment coefficients for all three models with error correction. A detailed overview is given in Table 7 below.

In all three models, the adjustment coefficient has a negative sign and is statistically significant. Table 8 gives a comparative overview of the parameters of all models, based on which it can be concluded that the models with greatest explanatory power (corrected coefficient of determination) are the ones used to assess the movement of NPLs at the level of the entire banking sector and in the corporate segment. 74% of variations in nonperforming loans at the level of the entire banking sector and 72% of variations in nonperforming loans in the corporate segment can be explained by changes in gross domestic product, nominal exchange rate, key interest rate of the National Bank of Serbia and year-on-year inflation. The model used to assess the movement of nonperforming loans in the retail segment demonstrated the lowest explanatory power amounting to 59%. The model used to assess the movement of NPLs in the corporate segment has the highest adjustment coefficient, which shows that during one quarter 29.4% of NPLs movement in the corporate segment adjust to their long-run equilibrium relationship with gross domestic product, nominal foreign exchange risk, key interest rate and year-on-year inflation rate.

Table 6: Error correction model - comparative overview of all three models

Determinant	Coefficient	Standard error	p value	Determinant	Coefficient	Standard error	p value
Model 1				Model 3			
Constant	12.86	1.15	0.00	Constant	-1.29	0.16	0.00
Adjustment coefficient	-0.19	0.01	0.00	D(LKIR)	-0.007	0.07	0.92
Model 2				D(LRP)	0.07	0.03	0.02
Constant	27.03	2.79	0.00	D(LCPI)	-0.03	0.01	0.01
D(LRP)	0.10	0.04	0.02	D(LCPI (-1))	0.04	0.01	0.01
BREAK	0.07	0.02	0.01	Adjustment coefficient	-0.27	0.03	0.00
Adjustment coefficient	-0.29	0.03	0.00				

Source: Author's calculations.

Table 7: Comparative overview of statistical properties of all three models

Dependent variable	Independent variables	ARDL model	Adjusted coefficient of determination	Adjustment coefficient	Independent variables that are statistically significant
NPL	GDP, ER, KIR, RP i CPI	ARDL (1,0,0,0,0,0)	74%	19%	GDP, ER, KIR i CPI
NPLC	GDP, ER, KIR, RP i CPI	ARDL (1,0,0,0,1,0)	72%	29%	GDP, ER, KIR i CPI
NPLR	GDP, ER, KIR, RP i CPI	ARDL (1,0,0,1,1,2)	59%	27%	ER, KIR i CPI

Source: Author's calculations.

The adjustment coefficient of 29.4% shows that in 3.4 quarters (100%/29.4%) or 10.2 months, the movement of NPLs in the corporate segment adjusts towards the long-run equilibrium relationship path with these variables. 19.8% of NPLs movement at the level of the entire banking sector in one quarter is adjusted to the long-run equilibrium relationship with gross domestic product, nominal exchange rate, key interest rate, RS risk premium and year-on-year inflation. **In 5 quarters (100%/19.8%) or 15 months, the NPLs movement at the level of the entire banking sector achieve full adjustment to the path of the long-run equilibrium relationship with these variables**.

27.5% of the movement of NPLs granted to the retail sector in one quarter adjust to the long-run equilibrium relationship with the nominal exchange rate, key interest rate and year-on-year inflation rate. **In 3.6 quarters (100%/27.5%) or 11 months, the movements of NPLs granted to the retail sector fully adjust to the path of the long-run equilibrium relationship with these variables**.

In the model used to assess the movement of NPLs at the level of the entire banking sector (model no. 1), in the part thereof showing short-run dynamics, except for the adjustment coefficient, there is no statistically significant coefficient ($p<0.05$). The constant is statistically significant and it shows that in the short run there is a level of NPLs that was carried over from the previous periods (persistence of nonperforming loans). In the model used to assess the movement of NPLs in the retail sector (model no. 2), in the part thereof showing short-run dynamics, the regression coefficient with the risk premium is statistically significant and it shows that in the short run, i.e., during the same quarter, a 1pp drop in the risk premium leads to a 0.10pp drop in NPLs in the corporate sector. Both the constant and the artificial variable are statistically significant. The constant shows that in the short run there is a level of NPLs that is determined autonomously, i.e., it represents an inherited level from the previous periods (persistence of nonperforming loans). The artificial variable covers the period from 2016Q2 to 2018Q2 and indicates the period when the government intervention in resolving NPLs granted to the corporate sector was the most intensive. In the model assessing the movement of NPLs in the corporate sector (model no. 3), in the part thereof showing short-run dynamics, the regression coefficient with the risk premium in the same quarter, and year-on-year inflation in the same quarter and with a lag of one quarter, show statistical significance of impact on retail NPLs. Despite the statistical significance, a very low value of the regression coefficients cannot be treated as a significant influence

Concluding remarks

Based on obtained results, the correctness of initial research hypotheses was corroborated: 1) there is a difference in systemic risk exposure between corporate loans and retail loans in the banking sector of the Republic of Serbia and 2) systemic risk exposure of the entire banking system of the Republic of Serbia can be approximated by corporate loans due to the specificity of Serbia's economic and banking system.

The obtained results show that the impact of GDP on NPLs in the retail segment is not statistically significant, while there is statistical significance and a high regression coefficient in the corporate segment and at the level of the entire banking system. Models used to assess the movement of NPLs in the corporate sector and at the level of the entire banking sector have similar statistical properties (the same statistically significant regressors with similar values and almost the same explanatory power of the model). The results of this research are especially significant because they have shown that the sensitivity of banks to changes in macroeconomic aggregates is important not only for management structures in commercial banks but also for macroeconomic and macroprudential policy makers. Finally, based on the conducted research, we can conclude that the financial system of the Republic of Serbia is much more sensitive to changes in the stages of the business cycle due to its underdevelopment (high share of corporate loans in the bank's total loan portfolio). The development of the capital market would enable business entities to have access to other sources of financing, which would have a triple effect on increasing the financial stability of the Republic of Serbia. First, access to different sources of financing would reduce the default rate of business entities

regardless of the stage of the business cycle, because it would facilitate the provision of external sources of financing, and competition would lead to lowering interest rates. In this way, banks would not lose their market share, because they would expand the range of services offered to the corporate and retail sectors (investment banking services) and diversify the structure of their assets, i.e., placements in favour of investments in corporate shares and corporate bonds. An additional argument in support of the abovesaid is the behaviour of commercial banks in the period when the level of NPLs threatened Serbia's financial stability. At that time, banks were reluctant to lend to the corporate sector, and the excess liquidity was directed towards the NBS bills and securities of the Republic of Serbia [12, p. 1]. Second, a lower level of corporate loans in the total loan portfolio of the banks would reduce the exposure to systemic risk, i.e., the level of credit risk procyclicality, thereby enhancing banks' resilience to changes in the stages of the business cycle. In the long run, change in the banks' loan portfolio structure in favour of retail loans would increase the profitability of banks, because retail loans have higher interest rates while requiring lower capital costs. Third, banks' balance sheets would be less sensitive to changes in interest rates as a result of reduced interest rate volatility. In this way, the financial system of the Republic of Serbia would not have found itself in a situation it experienced following 2008. At a time when the financial crisis had taken over the world and when monetary authorities of the world's leading economies were lowering interest rates, Serbia saw rising interest rates due to the inability of domestic banks to use sources of financing from their parent banks [11, p. 491]. During that period, banks in Serbia were faced with constant deleveraging to their parent banks [12, p. 12], hence they were focused exclusively on domestic deposits, which significantly raised the interest rates on deposits, followed by rising interest rates on loans.

References

1. Anastasiou, D., Louri, H. and Tsionas, M. (2018). Non-performing loans in the euro area: are core-periphery banking markets fragmented?, *International Journal of Finance& Economics*, 1-16
2. Aver, B. (2008). An Empirical Analysis of Credit Risk Factors of the Slovenian Banking System, *Managing Global Transitions*, 6 (3), 317-334
3. Bambulović, M. and Valdec, M., (2018, June), Determinants of Credit Cycle- Case of Croatia, *The thirteenth young economists' seminar,* organized by Croatian National Bank, Dubrovnik
4. Beck, R., Jakubik, P., & Piloiu, A. (2015). Key determinants of non-performing loans: new evidence from a global sample, *Open Economies Review*, Vol. 26 No. 3, 525-550
5. Benazić, M. and Radin, D. (2015). Macroeconomic Determinants of the Non-performing Placements and Off-balance Sheet Liabilities of Croatian Banks, *Organizacija*, Volume 48 (2), 75-87
6. Baudino, P. and Yun, H. (2017). Resolution of non-performing loans - policy options, Bank of International Settlement, Retreived .
7. Boumparis, P., Milas, C. and Panagiotidis, T. (2019). Non-performing loans and sovereign credit ratings, *The Rimini Centre for Economic Analysis*, Working Paper 19-13, 1-35
8. Božović, M., Urošević, M. i Živković, B. (2009). On the spillover of exchange-rate risk into default risk, *Ecconomic Annals*, Faculty of Economics, University of Belgrade, vol. 54(183), 32-55
9. Božović, M. (2019). Postoje li makroekonomski prediktori za point-in-time PD? Rezulatati na osnovu baze podataka stopa neizmirenja Udruženja Banaka Srbije, *Bankarstvo*, vol. 48, br.2, 12-29
10. Bykova, A. i Pindyuk, O. (2019). Non-Performing Loans in Central and Southeast Europe, *Policy Notes and Reports 32*, The Vienna Institute for International Economic Studies, 1-42
11. Đukić, Đ. I Đukić, M. (2009). The global financial crisis and the behavior of short-term interest rates-international and Serbian aspects, *Panoeconomicus,* 4 (2009), 491-506
12. Đukić, Đ. (2012). Drugi talas krize u evrozoni i mere za smanjenje rizika kolapsa realnog sektora i destabilizovanje bankarskog sektora u Srbiji, In Đ. Đukić and M. Jakšić (Eds.), *Dužnička kriza u zemljama* članicama *evro zone i njen uticaj na privredu Srbije* (pp. 1-12)*,* Beograd: Ekonomski Fakultet Beograd
13. Đukić, Đ. (2011). Da li je moguća brza deevrizacija privrede Srbije?, In M. Jakšić and J. Bajec (Eds.), *Nova strategija razvoja privrede Srbije - Izazovi ekonomske politike u 2011.godini* (pp. 203-213), Beograd: Ekonomski Fakultet Beograd
14. Jović, Ž. (2017). Analiza determinanti kreditnog rizika u uslovima izražene informacione asimetrije: primer bankarsko sektora Republike Srbije, doktorska disertacija, Ekonomski Fakultet, Univerzitet u Beogradu
15. Kjosevski, J., Petkovski, M. and Naumovska, E. (2019), Bank-specific and macroeconomic determinants of non-performing loans in the Republic of Macedonia: Comparative analysis of enterprise and household NPLs, *Economic Research*, Vol.32, No. 1, 1185-1203
16. Koju, L., Koju, R. i Wang, S. (2019). Macroeconomic determinants of credit risks: evidence from high-income countries, *European Journal of Management and Business Economics*, 41-53
17. Labus, M. (2020). Exchange rate targeting, *Ekonomika preduzeća*, No. 1-2, 23-34
18. Lojanica, N. (2018). Makroekonomski efekti monetarne transmisije u Srbiji: SVAR pristup, *Bankarstvo*, vol.47, Br.1, 14-31

19. Mladenović, Z. i Nojković, A. (2012) *Primenjena analiza vremenskih serija* (drugo izdanje), Beograd: Ekonomski Fakultet Univerziteta u Beogradu
20. Nkusu, M. (2011). Nonperforming Loans and Macrofinancial Vulnerabilities in Advanced Economies, *IMF Working Paper*, WP/11/161, 1-25
21. Odluka o klasifikaciji bilansne aktive i vanbilansnih stavki banke, Službeni Glasnik RS br. 94/2011, 57/2012, 123/2012, 43/2013, 113/2013, 135/2014, 25/2015, 38/2015, 61/2016, 69/2016, 91/2016, 101/2017, 114/2017, 103/2018 i 8/2019
22. Otašević, D. (2013). Analiza makroekonomskih determinanti kvaliteta kreditnog portfelja banaka u Srbiji, *Stručni radovi Narodne Banke Srbije,* 1-29
23. Ozili, P. (2019). Non-perforiming loans and financial development: new evidence, *The Journal of Risk Finance,* 20(3), 1-35
24. Strategija za rešavanje problematičnih kredita, Službeni Glasnik RS br. 55/05, 71/05-ispravka, 101/07, 68/05, 16/11, 68/12-US, 72/12, 7/14-US I 44/14
25. Szarowska, I. (2018). Effect of macroeconomic determinants on non-performing loans in Central and Eastern European countries, *Int. J. Monetary Economics and Finance*, Vol. 11, No. 1, 20-35
26. Tanasković, S. i Jandrić, M., (2015), Macroeconomic and Institutional Determinants of Non-performing Loans, *Journal of Central Banking Theory and Practice*, 47-62
27. Tabaković, J. (2017). Central bank policy after the crisis: example of Serbia, *Ekonomika preduzeća,* Broj 1-2, str. 83-102
28. Tabaković, J. (2018). Resolution of non-performing loans in Serbia: stability as an imperativ, *Ekonomika preduzeća,* Broj 1-2, 91-105

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INFLUENCE OF EXTERNAL FACTORS ON FOREIGN DIRECT INVESTMENT FLOWS USING THE EXAMPLE OF THE VISEGRAD GROUP AND SERBIA

Uticaj eksternih faktora na tokove SDI na primeru Višegradske grupe i Srbije

Abstract

This research paper examines the impact of external factors on the dynamics of foreign direct investment (FDI) trends in specific economies. The same subject will be analyzed through the examples of the Visegrad Group and the Republic of Serbia. The aim of the research is to determine the existence of a link between the impact of foreign direct investments on the growth and development of the economy observed through gross domestic product (GDP) in the 1990-2018 period. The results of the research indicate that Poland was the most successful in attracting and keeping FDI, compared to other countries. Further, the volume of FDI has been dependent on several external factors, such as overall business environment, economic crisis, political risks, positions in relevant institutions, pandemic, etc. Moreover, for the Republic of Serbia, it will be important that all stakeholders in the country have a proactive approach in order to keep FDI in the country. Finally, representatives of the authorities should be committed to fulfilling promised deals related to the regional cooperation and EU (European Union) accession and integration.

Keywords: *FDI, GDP, V4, Serbia, external factors, pandemic, crisis.*

Sažetak

Predmet istraživanja u ovom radu je utvrđivanje uticaja eksternih faktora na dinamiku kretanja stranih direktnih investicija (SDI) na konkretne privrede. Isto će biti analizirano na primeru Višegradske grupe i Republike Srbije. Cilj istraživanja je da se utvrdi postojanje veze između uticaja stranih direktnih investicija na rast i razvoj privrede posmatran kroz bruto domaći proizvod (BDP) u periodu od 1990. do 2018. godine. Rezultati istraživanja ukazuju da je Poljska bila najuspešnija u privlačenju i zadržavanju SDI u poređenju sa drugim zemljama. Dalje, obim SDI zavisio je od spoljnih faktora kao što su celokupno poslovno okruženje, ekonomska kriza, politički rizici, položaji u relevantnim institucijama, pandemija, itd. Štaviše, za Republiku Srbiju će biti važno da sve zainteresovane strane u zemlji imaju proaktivan pristup kako bi se SDI zadržale u zemlji. Konačno, predstavnici vlasti treba da se posvete ispunjavanju obećanih dogovora koji se odnose na regionalnu saradnju i pridruživanje Evropskoj uniji i EU integracije.

Ključne reči: *SDI, BDP, V4, Srbija, eksterni faktori, pandemija, kriza.*

Introduction

In literature, we notice different ways of defining foreign direct investment (FDI). "FDI, concurring to Kindleberger, speaks to coordinate venture in a company overseas in arrange to pick up changeless control over the generation, exchange and accounts of the company in which it is invested" [17, p. 100].

According to Grgurević [13], FDI is considered "the basic form of international capital movements, i.e., one of the most attractive forms of international cooperation and for achievement of development goals of the (investment) recipient country". FDI accelerates economic growth in several ways. Primarily, according to Gligorić [11], "new investments directly contribute to gross domestic product (GDP) growth, either through higher production of consumer goods, or through the production of (raw) goods for production through capital growth and/or technological progress". In addition, Neuhaus [27] adds that "FDI, due to knowledge transfer - efficient management systems or production know-how, or due to the influence on domestic companies on how to adopt new technology, has a positive indirect impact on economic growth". Limitations that may influence the decision of foreign investors to invest in an economy are as follows [14]: "unsatisfactory degree of political and economic stability; lack of a healthy macroeconomic environment due to delays in the implementation of liberalization and privatization of the domestic economy; low level of construction development and inadequate maintenance of the existing physical infrastructure; insufficient construction of institutional infrastructure; poorly developed financial market; unsatisfactory level of legal certainty for investors".

This research paper examines the impact of external factors, primarily the economic crisis and political risk, on the dynamics of FDI trends in specific economies. The same will be analyzed using the example of the Visegrad Group (V4) and the Republic of Serbia, in the 1990-2018 period.

The aim of the research is to determine the existence of a connection between the impact of FDI on the growth and development of the economy observed through GDP.

The deployed methodology includes a literature review, in the context of the effect of FDI on the economic growth of the recipient country, supported by an analysis of several sources of empirical evidence (UNCTAD data [36-44]; World Bank [49], [50]; OECD [28-31], and official national public sources available for the analyzed period [23], [24]) that could serve as a basis for future research.

This paper consists of five parts. The first part of the paper presents an introduction, followed by literature review in the second part. The third part of the paper provides an overview of the basic facts about FDI and analyzed countries. The following (fourth) part presents research results and discussion. The last (fifth) part of the paper contains the concluding remarks.

Literature review

The results of the research conducted so far vary in terms of the effect of FDI on economic growth of the recipient country (Table 1). The sample was created on the basis of Google Scholar searches by entering words FDI in Visegrad countries and Serbia (initial information 398 results), and filtering research papers which included effect/impact of FDI on GDP in the analyzed period. In accordance therewith, there were 24 relevant research results.

As already mentioned, FDI is one of the most attractive forms of international cooperation and for achievement of development goals of the recipient country [13], [11], [27]. Kovačević [19] believes that FDI can positively influence economic growth through three channels, which lead to increased production per employee. The first channel through which FDI can influence economic growth is an increase in the domestic investment rate. The second channel is the growing efficiency of the acquired company. The third channel occurs when there is a spillover of knowledge and technology which the foreign owner transfers to the acquired company, or to local companies. Gagović [10] believes that the greatest contribution of FDI to economic growth comes from investments in technical equipment, education, research and development, infrastructure, health care, etc. Gligorić [11] points out that theoretical and empirical findings indicate the existence of a positive effect of FDI on economic growth, employment and exports. According to Zdravković et al.

[47], positive effects of FDI on macroeconomic indicators (GDP and employment) can be found in research papers published by Habib and Sarwar [15] for Pakistan, in the period from 1970 to 2011. Furthermore, Pindžo and Vjetrov [32] confirmed findings of Alfaro et al. [1] whose research suggests that FDI played a fundamental role in contributing to economic growth (especially in terms of development of local financial markets). Moreover, Kemiveš [18] proved that there is a positive correlation between the cumulative share of FDI in GDP and annual GDP growth, using the example of the Visegrad Group countries, in the period from 1993 to 2003. It is also in line with the research of Bevan and Estrin [4], Globerman et al. [12], Fifeková and Hardy [9], Poulsen and Hufbauer [34] and Roaf et al. [35]. Finally, Vignjević-Đorđević and Kurtović [46] showed he positive effects of FDI that FDI is a crucial initiator of the economic development in the Western Balkans. Gagović [10] adds that t on economic growth cannot be considered a rule. Further to this, Nedeljković [25] points out that FDI does not always bring long-term benefits to the host country. Moreover, Nestorović [26], using the example of countries in transition in the period from 2001 to 2011, determined that FDI does not significantly affect GDP growth, but is positively correlated with the growth of GDP.

According to Minović [20]: 1) some studies testify to positive effects, some to negative ones, while others testify to mixed effects depending on the conditions of recipient countries and the type of foreign investments; 2) the reason for the different effects of FDI on economic growth lies in the use of different variables, as well as possible lack of analysis in FDI recipient countries [2], 2a) there is a possibility that different effects are caused by potential errors in the methods used for assessment [22], 2b) a possible reason is the use of total FDI rather than FDI by sectors [48], [21]; 3) the very extensive literature dealing with the impact of FDI on economic growth points out that the effects of FDI on economic growth depend on different conditions (economic, political, social, cultural)

Table 1: Research related to the effect of FDI on economic growth of the recipient country

No.	Research	Effect of FDI on economic growth		
		Positive	Negative	Neutral
1	Nair-Reichert and Weinhold (2001)	YES	YES	YES
2	Nedeljković (2003)		YES	
3	Kovačević (2004)	YES		
4	Alfaro et al. (2004)	YES		
5	Asheghian (2004)	YES		
6	Bevan and Estrin (2004)	YES		
7	Globerman et al. (2004)	YES		
8	Grubor (2006)			YES
9	Wang and Wong (2009)	YES		
10	Fifeková and Hardy (2010)	YES	YES	
11	Moura and Forte (2010)	YES	YES	
12	Poulsen and Hufbauer (2011)	YES		
13	Grgurević (2013)	YES		
14	Neuhaus (2013)	YES		
15	Gligorić (2013)	YES		
16	Habib and Sarwar (2013)	YES		
17	Pindžo and Vjetrov (2013)	YES		
18	Roaf et al. (2014)	YES		
19	Nestorović (2015)	YES		
20	Vignjević-Đorđević and Kurtović (2016)	YES		
21	Gagović (2016)	YES	YES	
22	Minović (2016)	YES	YES	YES
23	Zdravković et al. (2017)	YES		
24	Kemiveš (2017)	YES		
	Total	22	6	3

which prevail in FDI recipient countries (which goes in line with already mentioned Grubor's limitations [14]), and 4) the conducted research determined the interdependence between political risk and corruption and FDI, and between FDI and economic growth (through GDP growth) in the countries that are part of the Balkan Peninsula in the 2004-2014 period [46].

It can be concluded that there are more research studies indicating a positive impact of FDI on GDP (22 in total, where 17 are with clear positive impact) and less indicating a negative (6 in total, where only 1 is with clear negative impact) and neutral one (3 in total, where only 1 is clearly neutral). Furthermore, it is important to emphasize that 9 researchers analyzed external factors influencing the level of GDP [4], [9], [12], [14], [18], [20], [34], [35], [46], which will be the basis for further analysis in the fourth section.

Overview of the basic facts about FDI and analyzed countries

The subject of the analysis are five European countries: four members of the Visegrad Group (V4) and the Republic of Serbia.

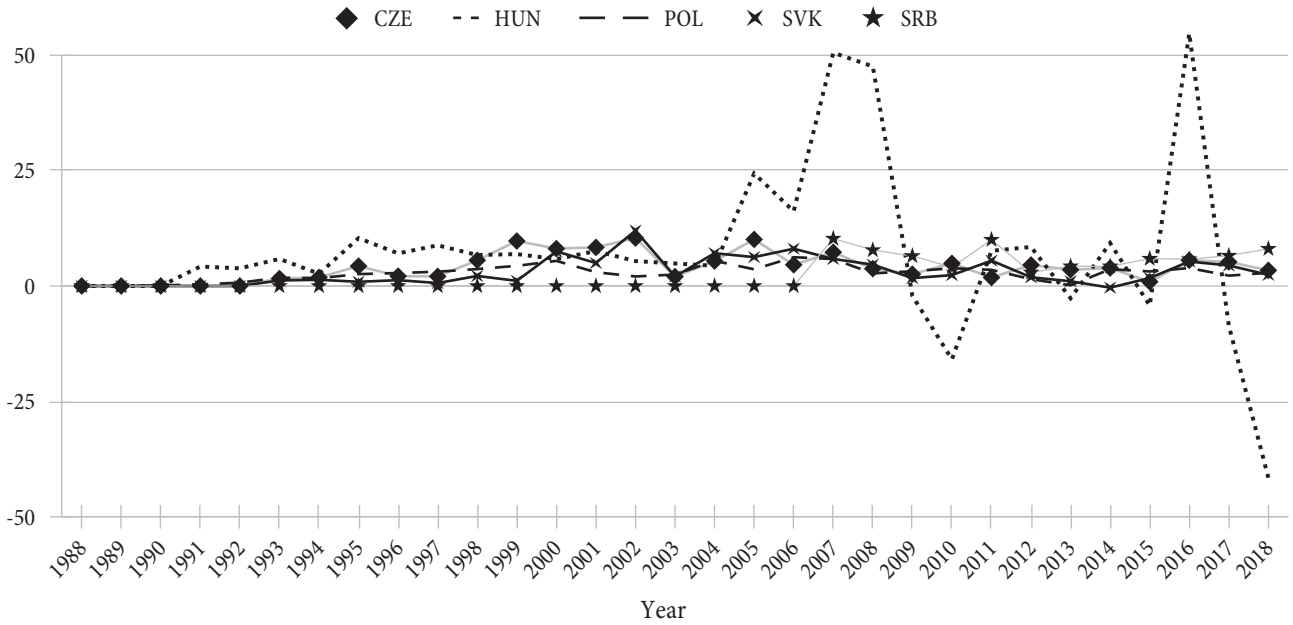
- The V4 countries were chosen because they successfully implemented the processes of European integration and transition, which directly contributed to their economic growth thanks to the FDI inflow model [35], recognizing that regions are interesting for foreign investors to invest in [42]; and
- The Republic of Serbia, which is in the process of European integration and was supposed to extract lessons from the development path of the V4, in order to achieve faster economic development in the future.

The V4 was established in 1991, with the aim of improving regional cooperation (which is more interesting to foreign investors than a single host country [42]) and faster entry into the European Union (EU) and NATO [42]. The countries of the V4 include the Czech Republic, Hungary, Poland and Slovakia.

In Figure 1 three large declines in foreign investment, which are generally conditioned by the crisis moments in the world economy, can be noticed. This is also one of the bases to determine how the time series analysis for the selected group of countries will be performed.

Since the beginning of the 1990s, when the countries of the V4 began to open their economies, investors have shown significant interest in investing in these countries.

Figure 1: FDI net inflows (%GDP)



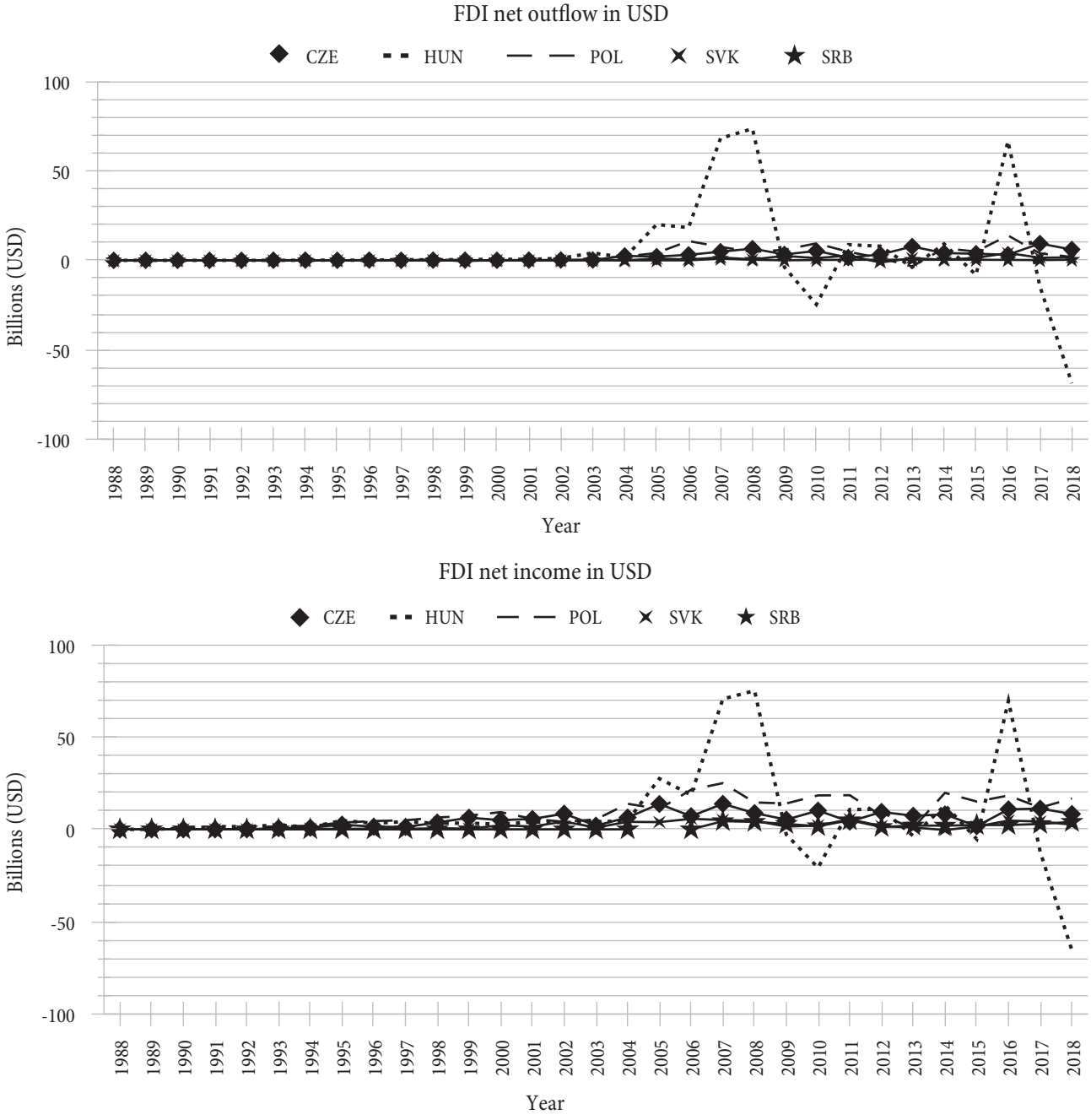
Source: [31], [44], [49].

Investments were predominantly directed to tradable sectors of the economy, especially the manufacturing sector, characterized by generating a high percentage of exports, but also a significant volume of investment in the services sector and other non-tradable sectors. The V4 are economically far ahead of most other EU countries [42].

The participation of inward FDI in total gross investment in fixed assets of the Visegrad Group countries increased significantly during the transition process, compared to the initial years of transition, which indicates the importance of FDI as an essential determinant of GDP growth in these countries (shown in Table 2 below). For example, in the Czech Republic in 2002 it reached 35.2% of gross fixed capital formation (5.8% in 1993), in Hungary 59.3% in 2012 (in 1993 it was 30%), in Slovakia 48.1% in 2000 (it was 4.1% in 1993) [42].

The influx of outside capital was for the most part finished within the shape of FDI related to the privatization handle, cross-border M&A (mergers and acquisitions), as well as the shape of greenfield speculations, which

Figure 2, 3: FDI net inflows and outflows (BoP, current USD)



Source: [31], [44], [49].

altogether characterized the V4 nations [35], where all overwhelming speculators were from the European Community (EC) nations, and afterward the European Union, with over 60% [36], [37], [38]. In 1990, the EC individuals contributed 31% (of 602 joint wanders add up to) within the Czech Republic, 36% (of 556 joint wanders add up to) in Hungary and 63% (of 869 joint wanders add up to) in Poland [36]. FDI inflows into Central and Eastern Europe (CEE) kept on be unevenly conveyed. A few of the nations of the locale have gotten to be generally expansive beneficiaries of FDI, such as Visegrad nations (in outright terms: the Czech Republic, Hungary and Poland), which together accounted for 69% of the region's stock in 1994 [37]. By the conclusion of 1999, the internal FDI stock of CEE come to USD 110 billion. This stock was basically concentrated in four nations: Poland (USD 30 billion), Hungary (USD 19 billion) and the Czech Republic (USD 16 billion), together bookkeeping for nearly three-fourths of add up to internal FDI stock in CEE. The FDI stock in Poland, by distant the driving beneficiary for a moment successive year, and FDI inflows have expanded each year since 1990. Remote financial specialists were clearly pulled in by the huge residential advertise. Inflows of FDI into the Czech Republic in 1999 surpassed the past record of 1998, owing to a great extent to a turnaround in privatization arrangements at that time. Whereas privatization arrangements amid the primary half of the 1990s excluded remote cooperation within the Czech Republic, the moment circular of privatization taken after the illustration of other nations such as Hungary, which had effectively included remote firms. Since of the knotty nature of cross-border M&A, these deals as well as FDI inflows into the locale have varied broadly over a long time. Poland and the Czech Republic were the major target nations in 1999 reflecting moderately huge privatization programs [39].

It can be concluded that the largest FDI inflows during the 1993-2013 period were in Poland (USD 170 billion) and the Czech Republic (USD 96 billion), while FDI inflows in Hungary were USD 89 billion and in Slovakia around USD 35 billion [42]. This fact, observed per capita, translates into the following: FDI inflows for the abovementioned period were the largest in the Czech Republic (USD 4,665) and Hungary (USD 4,387). The participation of FDI in GDP in 2013 was the highest in Hungary, where it reached 81% of GDP, and in the Czech Republic (64% of GDP) [35]. In other two countries, Poland and Slovakia, it was above 50%. It can be noticed that on average there was an increase of 1.77% in FDI inflow (presented in Table 3).

In the period from 1991 to 2008, Serbia has gone through several changes of its statehood status, from the Federal Socialist Republic of Yugoslavia to the Republic of Serbia. Also, it is important to state that the mentioned period was accompanied by other external risks of influential countries and Europe (EU sanctions, bombing, etc.), which

Table 2: Overview of the state of inward FDI in relation to GDP of the V4 in 1993, 2007 and 2013

V4 country	Overview of the state of inward FDI in relation to GDP (%)		
	1993	2007	2013
Poland	2.4	40.1	51.7
Czech Republic	8.5	59.5	64.2
Slovakia	4.7	62.2	59.5
Hungary	14	68.9	81.1

Source: [44].

Table 3: Inflow of FDI (in USD billion) in the period from 1993 to 2013 and participation of FDI stock in GDP of the V4 countries in 2013 (%)

V4 country	Inflow of FDI (in USD billion)		FDI stock in GDP (%)
	1993-2003	2004-2013	
Poland	54.2	115.8	51.7
Czech Republic	38.1	58.4	64.2
Slovakia	12.3	22.7	54.5
Hungary	34.6	54.1	81.1

Source: [31], [44].

directly affected the economic inflows in the country (which in fact meant that political instability led to less inflow of foreign capital) – all due to political risk (related to the party which was in power at the time). Throughout the analyzed period, there was a problem of lack of financial resources for investment activities in the Republic of Serbia, both due to low domestic accumulation of funds and ambitious development plans. In the period from 1990 to 2008, in Serbia there were: eight presidential elections and seven parliamentary elections, whereas in the period from 2009 until 2020 there were four 4 parliamentary and three 3 presidential elections. This indicates an extremely high level of political risk, as an integral component of the country's risk. As is well known, the level of country risk determines the amount of investment. Nestorović [26] believes that "after the political changes in Serbia (October, 2000), our economy was being reintegrated into the world's economic environment and included in the most important international economic and financial institutions", primarily through the privatization process.

Results and discussion

It is important to emphasize that since the beginning of the transition, around 44% of all FDI inflows to the Visegrad Group countries were directed towards Poland, over 23% in the Czech Republic, over 21% in Hungary, and 11% towards Slovakia [42].

Moreover, it can be concluded that for further analysis (which was mentioned in the previous sections) it will be crucial to take into consideration the overall business environment, economic crisis, political risks, positions in relevant institutions, pandemic, etc. (Table 4). It can be inferred that: a) the following external factors influenced the level of FDI in the analyzed countries: recession, world economic crisis, regional cooperation, EU accession and integration, political risks (including BREXIT, political instability in emerging markets, political instability in developed markets, elections), risks in commodity prices and COVID-19 pandemic; b) the following years were commonly important for all analyzed countries: 2008, 2013, 2017 and 2020.

As of now specified, FDI inflows to other Visegrad Group nations started when outside financial specialists were permitted to take an interest within the privatization handle and influenced it by making favorable trade environment. In expansion to this, radical changes and the measure of the clean showcase have altogether expanded the engaging quality of Poland. Between 1990 and 1999, ventures within the Czech Republic, Hungary and Poland accounted for as much as 79% of add up to FDI in CEE. Within the period from 1995 to 2001, Poland was the biggest beneficiary of FDI, taken after by the Czech Republic, as the moment in a push, in connection to all other modern individuals of the EU [12]. For illustration, in Poland, higher FDI inflows had an effect on the fiscal burden within the frame of wage charges, encouraging foreign financial specialists to reveal higher benefits in their branches in Poland (until the conclusion of the primary decade of the 21st century). In spite of the fact

Table 4: Important years which were affected by external factors impacting the level of FDI in the V4 and Serbia in the analyzed period

Research	External factors	Years	Countries
Bevan and Estrin (2004); Grubor (2006); Poulsen and Hufbauer (2011); Minović (2016);	Recession	1991, 2001	V4
		2013	V4+ Serbia
	World economic crisis	2008	V4+Serbia
Bevan and Estrin (2004); Globerman et al. (2004); Fifeková and Hardy (2010); Roaf et al. (2014); Kemiveš (2017);	Regional cooperation	1991	V4
	EU accession and	2004	V4
	EU integration	2011	V4
Fifeková and Hardy (2010); Vignjević-Đorđević and Kurtović (2016); Minović (2016);	Political risks (and corruption), risks in commodity prices, political instability in emerging markets, political instability in developed markets; BREXIT; COVID-19 pandemic;	2017	V4+ Serbia
	Presidential elections,	2020	V4+Serbia
	Parliamentary elections	2008, 2012, 2017	Serbia
		2008, 2012, 2014, 2016	Serbia

Source: [4], [9], [12], [14], [18], [20], [31], [34], [35], [42], [44], [46], [49].

that Poland was the pioneer within the locale, in 2002 and 2005 the Czech Republic pulled in the foremost capital compared to other Visegrad nations. Slovakia pulled in the least remote capital compared to other nations within the gather, with the exemption of 1995, 2000 and 2002. The most reasons for this are political advancements in Slovakia, authoritative obstructions to section, as well as a powerless financial environment [9].

The transition model of economic growth in Serbia, after the year 2000, was aimed at attracting FDI through the privatization process, with the aim of providing financial resources, modernization of the economy, assuming that FDI contributes to the acquisition of new knowledge, introduction of modern technologies, management policies and modern concepts on the market. Seventeen years later, it can be stated that the results did not meet the expectations. A large number of disputed privatizations, participation of capital of dubious origin, mostly with no intention of caring about the core business of the privatized company or continuing with the operation of the original company. Nestorović [26] points out that "in Serbia, until 2008, FDI was mainly aimed at conquering the domestic market through the production or provision of services (banks, trading companies, insurance companies, leasing companies, etc.) or the acquisition of some property (real estate, facilities…)". In other words, FDI was only partially focused on production intended for export, mainly to larger multinational companies with a strategic orientation (Železara Smederevo [Smederevo Ironworks], pharmaceutical industry, etc.). The limiting factor for FDI in Serbia is the country's risk, given that foreign investors demand a stable business climate in the long run. In the period from 2000 to 2012, the average annual level of net FDI was EUR 1.2 billion. FDI in Serbia, for the period from 2001 to 2012, achieved real growth at an average annual rate of 1.1%. During the pre-crisis period for the first eight years (2000-2007) of the analysis, an average annual FDI value of EUR 1.1 billion was achieved. The highest inflow of FDI was accomplished in 2006, in which the sale of "Mobtel" to Norwegian "Telenor" was negotiated at a price of 1.6 billion euros. Net FDI exceeded the level of EUR 1.0 billion during the six years of the observed period (2003, 2005, 2007, 2008, 2009 and 2011). In the five-year period after the onset of the crisis, 2008-2012, the average annual growth of net FDI was 0.66%, with an average annual value of FDI of EUR 1.2 billion [23].

According to Popovčić-Avrić and Vidas-Bubanja [33], the recessionary tendencies at the beginning of the 2000s directly reflected in investment flows, and recorded a three-year consecutive decline in the period from 2001 to 2003. In 2004, output investment flows increased again. Stable economic growth and scattered profits in a significant number of countries, further liberalization of investment policies and other specific factors, such as changes of certain world currencies' stability (weakening of the dollar), development tendencies in foreign-exchange markets and financial markets, are cited as key factors which further contributed to world investment dynamics, along with the high prices of certain goods (oil). M&A of companies financed by private investment funds have also contributed to FDI growth [40].

As per the pertinent actualities said hence distant, the critical advance in FDI inflows has been made by the Visegrad Group nations since joining the EU on 1 May 2004. The V4 joined the EU in 2004 as or maybe powerless economies, but with colossal development potential. With a populace of over 64 million, or 13% of the EU28 populace, the yield of the Visegrad Group economies accounted for as it were around 3.7% of add up to EU28 yield [5]. The foremost noteworthy impacts of increase have been realized through three fundamental channels of participation: exchange, capital and labor liberalization; regulation and legitimate advancement; and integration with get to to EU reserves [35]. In their think about, Erste Group analysts [5] demonstrated that, much obliged to the get to the EU, the V4 had accomplished a 1% higher yearly development of their GDP after joining the European Union (in early 2004). Slovakia and Poland have more than increased their GDP per capita in euros; getting control come to 65% of the EU15 typical; the compensation hole constrained by one-third and sends out created three times speedier than EU15 exchanges. The V4 is by and by the EU's fourth greatest exporter inside the EU28 and the moment greatest carmaker inside the EU (after Germany).

The record year was 2007, when the influx of outside capital in Poland come to USD 23.5 billion, which is around 80% more than in 2004, and approximately 15% more than in 2006. Amid 2008, FDI in Poland diminished by more than 37% compared to the past year, which is in line with worldwide showcase patterns. Such a noteworthy drop in speculation in Poland may demonstrate a profound subsidence in connection to the country's speculation exercises. On the other hand, this happened a year after Poland accomplished a record result, i.e., sometime recently the episode of the world financial emergency. The negative affect of the emergency in Poland was overcome in 2011, and in 2012 FDI recorded a noteworthy decay of more than 82% compared to the past year. This decrease is generally due to the volume of contributed capital, which dropped sevenfold in 2012. Had the contributed capital not appeared a declining drift, FDI inflows in Poland would have balanced the negative impacts of the emergency [41].

The financial crisis which started in 2008 essentially disturbed worldwide remote venture streams. FDI diminished by 20% compared to the past year. In creating nations, this decay is indeed more exceptional and sums to 33%. Amid 2009, there was a decrease in remote venture once more. This decrease was essentially due to a diminish in M&A (by approximately two-thirds), and to a lesser degree to a diminished volume of greenfield ventures [34]. From 2008 onwards, the Visegrad Group nations have moreover experienced genuine results of the worldwide financial retreat. In Hungary, venture was essentially decreased and other capital streams were negative. This was essentially the result of an increment in credits inside the same company and the reimbursement of obligations of Hungarian branches to parent companies. Remote coordinate venture in Hungary was especially influenced by the emergency amid 2009 and 2010, both in supreme and relative terms compared to other nations, such as Poland and the Czech Republic. Period from 2011 to 2012 is characterized by an increment within the influx of FDI, but agreeing to the National Bank of Hungary, these are a result of the influx of capital in transit. The circumstance within the Czech Republic is comparative, where FDI in 2012 was four times higher than in 2011. From the investigation of FDI inflows to the nations of the Visegrad Group it can be induced that their nearness is guaranteed by solid financial and exchange ties of the locale with other individuals of the EU, particularly with the individuals of the Money related Union (i.e., individuals of the Eurozone). On normal, almost 70% of all FDI inflows to Poland, the Czech Republic, Slovakia and Hungary come from Eurozone part states. In this regard, the Baltic nations are totally diverse from the Visegrad Group nations, where 35% of their FDI inflows come from euro range nations. In any case, the presence of reliance on one range, indeed in spite of the fact that it is a progressed financial locale, can have negative results. This was particularly apparent amid the worldwide financial emergency [41].

The survey results of the auditing and consulting company E&Y in 2015 [6] show that Serbia is one of the five most attractive countries for foreign direct investment in the European industry, and is rated second in the growth rate of the number of new jobs created from FDI. The significance of FDI for economic growth is also evidenced by the Report of the National Bank of Serbia from December 2016, which states the following [24]: "During the ten months of 2016, the net inflow of FDI amounted to EUR 1.5 billion, higher by 4.5% compared to the same period last year and is focused mainly on export-oriented sectors. The projection of net FDI for 2016 amounts to EUR 1.8 billion, which is, at the level of 2015 alone, a remarkable improvement of the business environment further confirmed by the World Bank list, where Serbia has made progress and ranked 47th . Serbia is also in the group of ten countries that have improved their business environment the most. Before the crisis, most FDI was directed to the non-tradable sector, such as finance, construction and real estate. After the outbreak of the crisis, and especially during the last three years, the structure of FDI has improved given that more investment has been directed towards the tradable sectors. Within the manufacturing industry, the largest FDI inflows were recorded in the production of electrical equipment, motor vehicles, chemical products, tobacco, rubber and plastics and food products."

FDI in worldwide figures for 2017 is 18% higher than it was in 2016, which was somewhat higher compared

to 2013. It is important that the level of FDI within the final quarter of 2017 was underneath the level of 2013. In differentiate, most OECD countries' share of worldwide outward FDI diminished but for Chile, the Czech Republic, Ireland, Japan, Korea, Luxembourg, Mexico, the Netherlands, Poland, Switzerland and Turkey. In spite of these changes, a few OECD nations proceed to account for bigger offers of internal and outward FDI than of GDP, demonstrating that they remain among the more monetarily coordinates economies within the world. For the inward-oriented ones, these nations incorporate Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Hungary, Iceland, Ireland, Israel, Latvia, Luxembourg, the Netherlands, Unused Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the Joined together Kingdom and the Joined together States. For the outward-oriented, these nations incorporate Australia, Austria, Belgium, Canada, Chile, Denmark, Finland, France, Germany, Iceland, Ireland, Israel, Japan, Luxembourg, the Netherlands, Norway, Spain, Sweden, Switzerland, the Joined together Kingdom and the Joined together States. In differentiate, all non-OECD G20 economies account for littler offers of internal and outward FDI than of GDP. By and large FDI diminished in EU by 27% in 2017 [28].

In 2017, FDI growth within the Republic of Serbia expanded by 22% to the level of USD 2.9 billion, as a result of reinvested profit or intercompany credits. Tragically, capital venture in modern ventures diminished by 10% compared to 2016 (from USD 505 billion in 2016, to USD 281 billion in 2017 - where the deal of Železara Smederevo to the Chinese company Hebei Press & Steel had a noteworthy affect). Subsequently, the Republic of Serbia was positioned among the top five move economies within the world by the level of FDI surge [28].

FDI in global figures for 2018 is 27% lower than it was in 2017. Inflows to the OECD area decreased by 23% and outflows from the OECD area decreased by 41%. FDI flow in the EU countries decreased by 20% (it represents 22% of total global FDI inflow) and FDI outflow in the EU countries decreased by 15% (it represents 41% of total global FDI outflow). It is important to stress that FDI flows in the analyzed countries did not have a significant influence on the overall score [29]. According to AT Kearney [3], political risks are still a primary concern for investors. Investors considered three key risks for FDI: 1) increase in geopolitical tensions, 2) rise in commodity prices and 3) political instability in the recent emerging markets, along with the political instability in the developed markets. The results of survey emphasized the importance of the regional economy. According to EY [7], game changers for FDI flows are: geopolitical risk, instability in the EU, increase of pollution and BREXIT.

In 2018, the Republic of Serbia was at the same time: 1) the second transitional economy in the world in terms of FDI inflows - growth of 44% (up to USD 4.1 billion), as a result of capital investment in a) existing large state-owned companies, such as Nikola Tesla Airport and RTB Bor, b) creation of automotive cluster (Essex Europe) and c) R&D centers (such as Continental's Research and Development Center in Novi Sad); 2) ranked as the third among transition economies in the world at the level of FDI outflows [29].

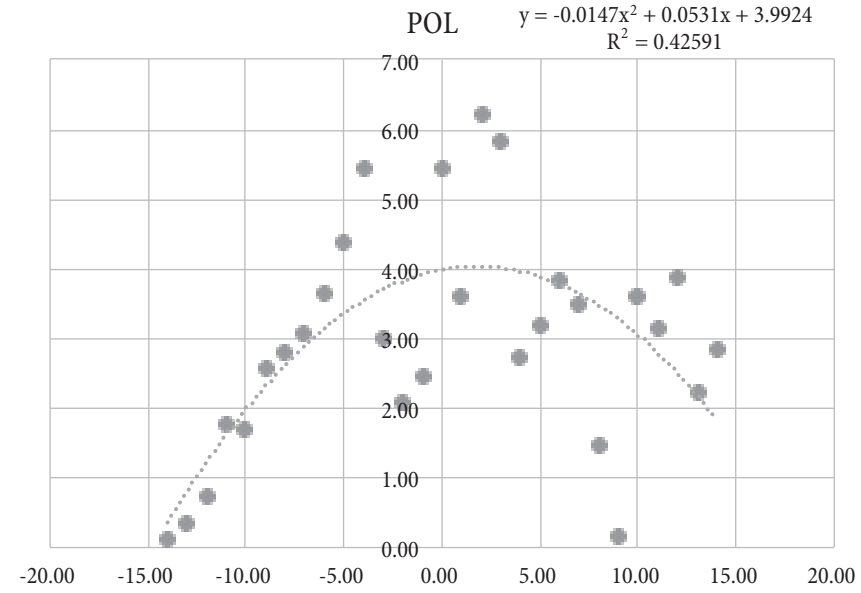
Worldwide FDI expanded by 12% in 2019, but remained underneath normal levels between 2010 and 2017. Inflows to the OECD zone expanded by 6% (the most reduced level since 2005) and surges from the OECD region expanded by 62%. FDI streams within the EU nations expanded by 14% (speaking to 31% of worldwide FDI inflows) and FDI surges within the EU nations expanded by 34% (speaking to 36% of worldwide FDI surges). Once more, it is crucial to push that the FDI streams within the nations analyzed in this did not have noteworthy impact on the by and large score [30], [31]. EY [8] think about focused the negative impact of political dangers on FDI streams. Overviewed businesses say that BREXIT is the number one hazard to Europe's engaging quality, with political flimsiness within the EU being the moment, the rise in populist and protectionist sentiments being the third, and worldwide political instability displaying itself as the fourth fundamental hazard point. Agreeing to the EY specialists, in arrange to stay alluring in this reframed business. Europe - businesses and governments together - must think inventively, act unequivocally, and put cohesion and collaboration at the heart of everything it does.

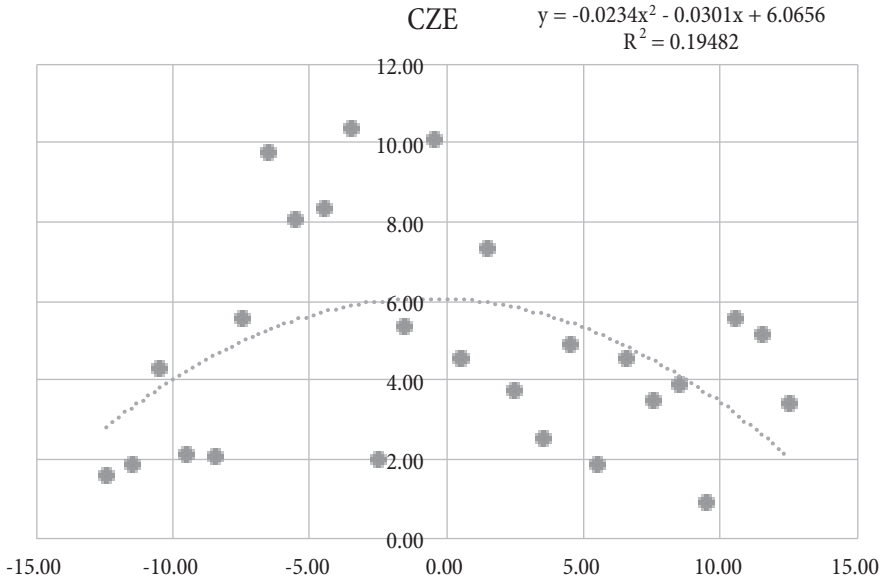
According to UNCTAD and OECD reports for 2018 and 2019, for all participants in the FDI inflows, it will be important to conduct the business in accordance with: 1) UNDP 2030 Agenda for Sustainable Development [45], including applying of environmental, social and governance (ESG)-related risk management, and 2) investment policy packages (i.e., these may lead companies to shift the geographical location of their operations) [30], [31], [43], [44].

The end of 2019 and the year of 2020 were marked by the COVID-19 pandemic, which has a negative impact on the economy. Based on the views expressed in the World Investment Report 2020 [43] related to the expected decline in FDI in 2020 (30-40%) and experience from the global economic crisis in 2007, a prediction of FDI inflows will be made for the analyzed group of countries for the next three (3) years using the polynomial trend (Figure 3-7 and Table 5).

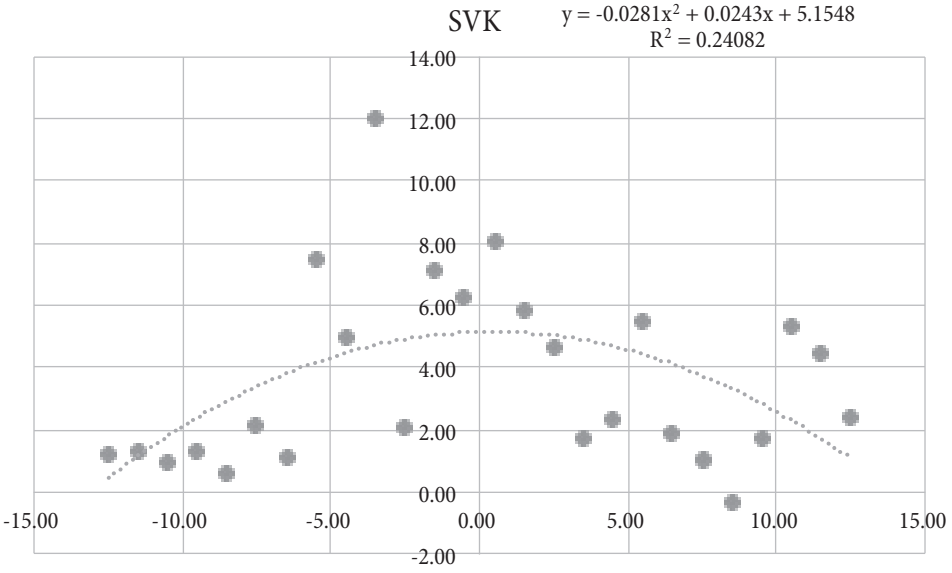
It can be concluded that four Visegrad Group countries will have a decreasing trend of FDI, while the Republic of Serbia will have an increasing trend. This can be explained with the current level of the country's development and the possibility for its further growth. On the basis of research results it can be confirmed that the significance

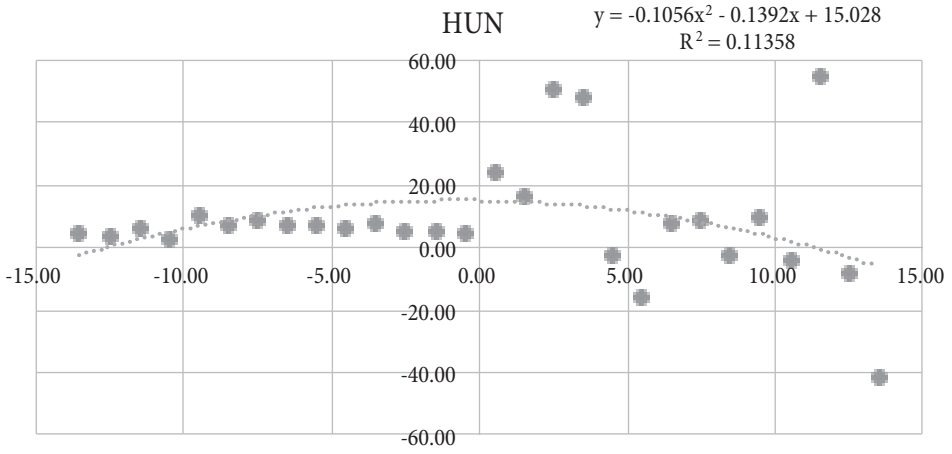
Figures 3, 4: Polynomial trend of FDI in analyzed countries for the period 2019-2021 (BoP, current USD)

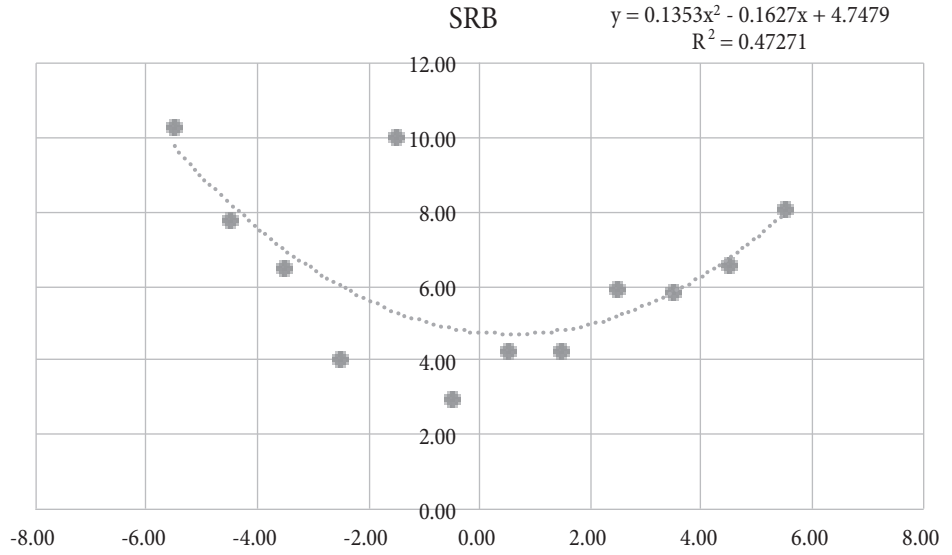




Figures 5, 6, 7: Polynomial trend of FDI in analyzed countries for the period 2019-2021 (BoP, current USD)







Source: Authors' calculations.

Table 5: Polynomial trend of FDI in analyzed countries for the period 2019-2021 (BoP, current USD)

Country	2019	2020	2021
Poland	1.3946	0.7093	-0.0228
Czech Republic	1.4814	1.0788	0.6468
Slovakia	0.361625	-0.400875	-1.219575
Hungary	-9.1928	-12.5	-16.0184
Republic of Serbia	11.521875	13.578775	15.906275

Source: Authors' calculations.

of FDI for the growth and development of an economy is determined by external factors, first and foremost by the economic crisis and political risks. Generally, it is of utmost importance that a country adopts a set of relevant policies which are in accordance with UNDP 2030 Agenda for Sustainable Development (including ESG-related risk management) and investment policy packages, which will optimally attract (and retain) FDI, and their influence will be paramount for all society. It is essential to say that all stakeholders in a country which is the subject of investment should have a proactive approach in order to keep the FDI in the country.

Conclusion

It can be concluded that the volume of FDI has been dependent on external factors, such as overall business environment, economic crisis, political risks, positions in relevant institutions, pandemics, etc. Generally, it is necessary that the country adopts a set of relevant policies which are in accordance with UNDP 2030 Agenda for Sustainable Development (including ESG-related risk management) and investment policy packages which will optimally attract (and retain) FDI and their influence will be important for all society. It is important to say that all stakeholders in the country should have a proactive approach in order to keep FDI in the country. Furthermore, representatives of the authorities should be committed to fulfilling promised deals related to the regional cooperation and EU integration and accession.

Having in mind actual COVID-19 pandemic, which has negative impact on the economy, estimates regarding the decline of FDI and experiences from the crisis in 2008, the authors of the paper determined the future expected values (using the polynomial trend of FDI). Accordingly, it can be concluded that the Republic of Serbia will have an increasing trend of FDI. This can be explained with the level of the country's development and possibility for further growth, especially in terms of resources related to the web design industry, the overall IT industry and other digital technology related skills and areas. Moreover, in the Republic of Serbia, there is potential for development of: 1) the production of organic food, more sophisticated agricultural products and similar consumer items, 2) tourism and hospitality offers, 3) the creative industry, 4) the establishing of clusters connected to big producers/ service offers in the country and abroad (such as car industry, air services, transport, etc.).

Future research will cover the impact of the pandemic on FDI levels in the Western Balkans.

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References

1. Alfaro, L., Chanda A., Kalemli-Ozcan, S., & Sayek, S. (2004). FDI and economic growth: the role of local financial markets. *Journal of International Economics, 64*(1), 89-112.
2. Asheghian, P. (2004). Determinants of economic growth in the United States: The role of foreign direct investment. *The International Trade Journal, 18*(1), 63-83.
3. AT Kearney. (2018). FDI confidence index – Investing in a Localized World.
4. Bevan, A. A., & Estrin, S. (2004). The determinants of foreign direct investment into European transition economies. *Journal of Comparative Economics, 32*(4), 775-787.
5. *Erste Research*. (2014). *Visegrád Group countries 10 years in the EU: Many reasons to celebrate, but also a lot of work*.

6. EY. (2015). EY's Attractiveness Survey: Europe 2015 Comeback time.
7. EY. (2018). EY's Attractiveness Survey: Game changers.
8. EY. (2019). EY's Attractiveness Survey: How can Europe raise its game?
9. Fifeková, M., & Hardy, J. (2010). Business Service Foreign Direct Investment in Central and Eastern Europe. *Project Report, published by the Economy and Society Trust, Brno*.
10. Gagović, N. (2016). Determinante rasta izvoza i analiza mogućnosti povećanja izvoza Srbije. Doktorska disertacija, Univerzitet Singidunum.
11. Gligorić, M. (2013). Low inflow of foreign direct investment: regional problem or a specificity of Serbia?. *Quarterly Monitor, 34*, 65-70.
12. Globerman, S., Shapiro, D., & Tang, Y. (2004). Foreign Direct Investment in Emerging and Transition European Countries. *Working Paper, Western Washington University*.
13. Grgurević, N. (2013). Impact of foreign direct investment to countries in transition. Anali poslovne ekonomije, 5(8).
14. Grubor, M. (2006). Determinante privrednog sistema za privlačenje stranih direktnih investicija u zemlje u tranziciji. *Industrija, 34*(3), 53-64.
15. Habib, M. D., & Sarwar, S., (2013). Impact of foreign direct investment on employment level in Pakistan: A time series analysis. *Journal of Law, Policy and Globalization, 10,* 46-55.
16. International Monetary Fund. Retrieved from https://data.imf.org/?sk=4c514d48-b6ba-49ed-8ab9-52b0c1a0179b.
17. Jovanović-Gavrilović, P. (2004). *Medjunarodno finansijsko poslovanje*. Beograd: Ekonomski fakultet.
18. Kemiveš, A. (2017). Strane direktne investicije kao faktor privrednog rasta u zemljama Višegradske grupe i Republici Srbiji. Master rad, Univerzitet Singidunum.
19. Kovačević, R. (2004). Foreign direct investment and economic growth: the experience of European Union countries. *Medjunarodni problemi, 56*(4), 409-446.
20. Minović, J. (2016). Strane direktne investicije i privredni rast balkanskih zemalja. In R. Kovačević & M.Gligorić, *Strane direktne investicije i privredni rast Srbije* (pp. 103-118). Beograd: Naučno društvo ekonomista Srbije sa Akademijom ekonomskih nauka i Ekonomski fakultet u Beogradu.
21. Moura, R., & Forte, R. (2010). The Effects of Foreign Direct Investment on the Host Country Economic Growth - Theory and Empirical Evidence. *FEP Working Papers,* (390).
22. Nair-Reichert, U., & Weinhold, D. (2001). Causality tests for cross-country panels: a new look at FDI and economic growth in developing countries. *Oxford Bulletin of Economics and Statistics, 63*(2), 153-171.
23. National Bank of Serbia. (2013). Macroeconomic trends in Serbia.
24. National Bank of Serbia. (2016). Macroeconomic trends in Serbia.
25. Nedeljković, M. (2003). Foreign direct investment as a prerequisite for corporative culture. *Industrija, 31*(3-4), 89-104.
26. Nestorović, O. (2015). Da li strane direktne investicije doprinose privrednom rastu zemalja u tranziciji? *Ekonomske teme, 53*(2), 273-282.
27. Neuhaus, M. (2013). *The Impact of FDI on Economic Growth. An Analysis for the Transition Countries of Central and Eastern Europe*. Switzerland: Springer Nature Physica-Verlag Heidelberg.
28. OECD. (2018). FDI in figures.
29. OECD. (2019). FDI in figures.
30. OECD. (2020). FDI in figures.
31. OECD. Retrieved from http://www.oecd.org/sdd/na/.
32. Pindžo, R., & Vjetrov, A. (2013). The importance of determinants influencing FDI inflows within the CEE region. *Industrija, 41*(1), 117-130.
33. Popovčić-Avrić, S., & Vidas-Bubanja, M. (2009). *Međunarodna ekonomija*. Beograd: Zavod za udžbenike.
34. Poulsen. L., & Hufbauer, G. (2011). Foreign Direct Investment in Times of Crisis. *Working Paper 11–3, Peterson Institute for International Economics*.
35. Roaf, M. J., Atoyan, M. R., Joshi, M. B., & Krogulski, M. K. (2014). *Regional Economic Issues-Special Report 25 Years of Transition: Post-Communist Europe and the IMF*. International Monetary Fund.
36. UNCTAD. (1991). World Investment Report – The Triad in Foreign Direct Investment.
37. UNCTAD. (1995). World Investment Report – Transitional Corporations and Competitiveness.
38. UNCTAD. (2000). World Investment Report – Cross-border Merger and Acquisition and Development.
39. UNCTAD. (2003). World Investment Report – FDI Policies for Development: National and International Perspectives: Overview.
40. UNCTAD. (2005). World Investment Report – Transitional Corporations and Internationalization of R & D.
41. UNCTAD. (2013). World Investment Report - Global Value Chains: Investment for Trade and Development.
42. UNCTAD. (2014). Global Investments Prospects Assessment 2016-18.
43. UNCTAD. (2020). World Investment Report – International production beyond the pandemic.
44. UNCTAD. Retrieved from http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx.
45. UNDP. (2020). The 2030 Agenda for Sustainable Development. Retrieved from https://sustainabledeve lopment.un.org/.
46. Vignjević-Đorđević, N., & Kurtović, S. (2016). Corporate governance and foreign direct investment: Lessons for the future of the Western Balkans. *Ekonomika preduzeća, 64*(3-4), 263-274.
47. Zdravković, N., Đukić, M., & Bradić-Martinović, A. (2017). Impact of FDI on unemployment in transition countries: Panel cointegration approach. *Industrija 45*(1), 161-174.
48. Wang, M., & Wong, M. S. (2009). Foreign direct investment and economic growth: The growth accounting perspective. *Economic Inquiry, 47*(4), 701-710.
49. World Bank. (2016). Doing Business Report 2015.
50. World Bank. Retrieved from http://data.worldbank.org/indicator/NY.GDP.MKTP.CD.

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THE INFLUENCE OF eWOM ON THE USE OF MOBILE BANKING

Uticaj eWOM komunikacije na korišćenje mobilnog bankarstva

Abstract

This paper builds on research by [20] and examines the influence of eWOM on factors such as social norms, initial trust, perceived usefulness, ease of use, attitude and intention of using mobile banking in the territory of Serbia. The survey was conducted by online and offline questionnaires completed by 501 respondents. The analysis was performed using SPSS22 and AMOS22 tools, where structural equation model (SEM) was used to test the direct influence of eWOM on social networks on the attitudes and intentions of clients to use mobile banking services. In response to the problem, we found a set of factors that influence the attitude and intention of clients to use mobile banking, which managers can emphasize when creating a marketing strategy.

Keywords: *eWOM, mobile banking, mobile financial services, survey, structural equation model*

Sažetak

Ovaj rad se nadovezuje na istraživanje [20] i ispituje uticaj eWOM komunikacije na faktore kao što su socijalne norme, početno poverenje, uočena korisnost, jednostavnost upotrebe, stav i namera korišćenja mobilnog bankarstva na teritoriji Srbije. Anketa je sprovedena pomoću onlajn i oflajn upitnika koji je popunio 501 ispitanik. Analiza je izvršena pomoću alata SPSS22 i AMOS22, gde je model strukturne jednačine (SEM) korišćen za testiranje direktnog uticaja eWOM komunikacije na društvenim mrežama na stavove i namere klijenata da koriste usluge mobilnog bankarstva. Kao odgovor na problem pronašli smo skup faktora koji utiču na stav i nameru klijenata da koriste mobilno bankarstvo, što menadžeri mogu naglasiti prilikom kreiranja marketinške strategije.

Ključne reči: *eWOM, mobilno bankarstvo, mobilne finansijske usluge, anketa, model strukturne jednačine*

Introduction

A mobile phone with an internet connection has become an integral part of users' lives, which gives banks enormous potential [22]. Therefore, the latest solution of banking channels that should make it easier for users to make micropayments is mobile banking [3], which, compared to the conventional banking, provides mobility, flexibility and ubiquity [18]. It is defined as the interaction with a banking institution and services through portable devices with instant internet connection [24], in order to electronically complete financial and non-financial transactions without the need for direct contact with a bank officer [23]. However, one of the main causes of failure in the innovation market is resistance among users in the form of functional (use, value and risk) and physical (tradition and image) barriers to the adoption of innovation [7]. Since mobile telecommunications and the wireless transaction environment involve immateriality and uncertainty, evaluating the quality of mobile banking is a difficult task for users [18]. Despite all the benefits, users are reluctant to accept mobile services, which may be partly because they are already accustomed to cheap online services with fixed internet [4], because not all users are predisposed to break their routine [23] and radically change behavior by adopting new banking channels [32], or because some of them have a need for the human factor, ie. face-to-face contact with a bank officer [23].

With the development of Internet technology that has enabled each individual online to connect with others, word-of-mouth communication has modified the transmission and exchange of information and adopted an online form commonly referred to as electronic word-of-mouth communication (eWOM) [36]. Hennig-Thurau (2004) defined eWOM as "Any positive or negative statement by potential, actual or former customers regarding a product or company, which is available to a multitude of people and institutions via the Internet." [34]. Before adopting any technology or before purchasing a product/service, consumers critically analyze the online reviews of other consumers, in order to make the best possible purchase decision [28]. This online search for information, where in a few clicks and seconds you can get extensive information related to the desired topic using eWOM, means that it will no longer be easy to have loyal users [12]. Banks must first have a good business strategy, they must decide which customer segments to target, which product / service values to offer [30] and which information technology and software solutions to use [31].

With regard to the fact that the information received from the internet sources and virtual communities have a significant influence on consumers' decision on whether to use mobile banking or not, this work examines the influence eWOM has on factors such as initial trust, social norms, perceived usefulness and simplicity of use, users' opinion and intention to use mobile banking in the context of the Republic of Serbia. The research problem is related to the weak diffusion of the use of mobile banking in the Serbian market, bearing in mind the number of users of banking services, the number of users of mobile devices and the banking development potential [11]. A review of the literature reveals claims by various authors that the information obtained from Internet sources and virtual communities significantly influences consumer decisions about the use of mobile banking [35], [20], [34]. The aim of the research is to obtain information on the extent to which eWOM influences factors such as social norms, trust, perceived usefulness and the simplicity of use of mobile banking, attitude and intention of customers to use it. The results of the research will suggest the factors that managers should bring closer to users and stimulate them to "talk" about it on the Internet, in order to encourage eWOM.

Literature review and hypothesis development

Perceived utility is the belief or subjective feeling of an individual that using mobile banking will improve their performance [4], [13] and lead to the achievement of their specific goals. Based on the results of papers such as: [1], [8], [17], [29] and many other previous studies in different environmental contexts that have concluded that perceived usefulness is the strongest predictor of customer behavior [19], the authors formed the following hypotheses:

H1. Perceived usefulness positively influences user attitudes.

H2. Perceived usefulness positively influences the user's intention to continue using mobile banking.

Simplicity of use represents the degree to which the user is willing to use the m-banking system without making effort [13], ie. to be sure that he will not experience physical and mental stress in certain aspects when using it [21]. Authors like [13], [15] and [23] mentioned that simplicity depends on the expertise of users. However, based on the results of papers such as: [8], [13], [17], [32], the authors hypothesize that banks should focus on achieving simplicity of use, because it has proven to be the factor with the greatest overall effect on the acceptance of mobile financial services [15].

H3. Perceived ease of use has a positive effect on perceived usefulness.

H4. Perceived ease of use has a positive effect on user attitudes towards mobile banking.

Social norms refer to the users' perception of other people's opinions (most often the opinions of people who are important to them [20] about whether the users should behave in a certain way. Other people's opinions usually influence the users' behavior because the users need to maintain their identification with the group and improve their social status [15]. These norms refer to the possibility that a recommendation from a family member / friend may increase the likelihood of using the mobile application [6]. Their influence on the users' intention of behavior is also confirmed by [9] and therefore the authors formed the following hypotheses:

H5. Social norms positively influence the perceived ease of use.

H6. Social norms positively influence the perceived usefulness of the mobile banking service.

Trust is related to security, privacy and practicality [10] and it is crucial for building long-term relationships between users and companies, especially in a risk-prone m-banking environment [24]. The level of trust comes under the influence of the lack of problems experienced in the past, and some users, even if they did not fully trust m-banking, still used it [27]. This is a necessary factor for using mobile banking, and some authors define it as an individual's willingness to take risks to meet a need without prior experience or significant information [20]. Therefore, the authors formed the following hypotheses:

H7. Trust has a positive effect on perceived ease of use.

H8. Trust has a positive effect on perceived usefulness.

Attitude is an indicator of behavior, which is formed before behavior (ie. before users evaluate the benefits of new channels and services that are influenced by social interaction and media messages [26]) and has positive effects on the intention to use mobile payment systems [9]. Attitudes explain user intentions [6] and can even predict them together with subjective norms and beliefs [23], so the authors formed the following hypothesis:

H9. The attitude has a positive effect on the intention to continue using mobile banking.

In today's technological age, customers have more interactions and pass on information that influences their decisions [35], and now it only takes a few seconds and clicks to spread useful information around the world [28]. Social networks have become a channel for consumers who can exchange their perceptions, attitudes or feedback about a company, goods and services and find useful information about them. Accordingly, the authors modified the part of the [20] survey concerning WOM, according to the [34] study examining the influence of eWOM on the use of mobile banking, and formed the following hypotheses:

H10. eWOM has an effect on perceived ease of use.

H11. eWOM has an effect on perceived usefulness.

H12. eWOM has an effect on user attitudes.

H13. eWOM has an effect on the intention of users to continue using mobile banking

Research conducted by [2] and other authors listed in their work proved that eWOM has a positive effect on subjective norms. Positive eWOM can increase consumer intentions to choose and buy a particular brand, because online brand recommendations and offers create a positive image and increase customer trust and loyalty, and in turn such behavior can improve customer attitude and intention to use the brand [35]. Accordingly, the authors formed the following hypotheses:

H14. eWOM has an effect on social norms.

H15. eWOM has an effect on initial trust.

Proposed model

The model taken from the research of the authors [20], was modified in accordance with [34], so that it reflects

the influence of eWOM on the use of mobile banking. The adapted model is shown in Figure 1 below.

Results

The target population included all the respondents, no matter if they are using, not using, or used to use the service of mobile banking, as well as the respondents who are using or used to use social media. The questionnaire was designed including 34 questions 5 of which were about demographic characteristics, and 27 were translated and adapted to the survey [20], with 1-7 Likert scale. Two questions were added about whether the respondents are using or used to use mobile banking services, as well as if they are social media users. In accordance with [28], both online and offline methods were used in order to increase the number of respondents and improve the possibility of generalization of the results, and in order for the weaknesses of one method to be overcome by the strengths of the other.

The size of the population of bank clients whose attitudes are being studied here was not known at the moment this work was being written, so the validity of the sample size is checked by Cochran formula:

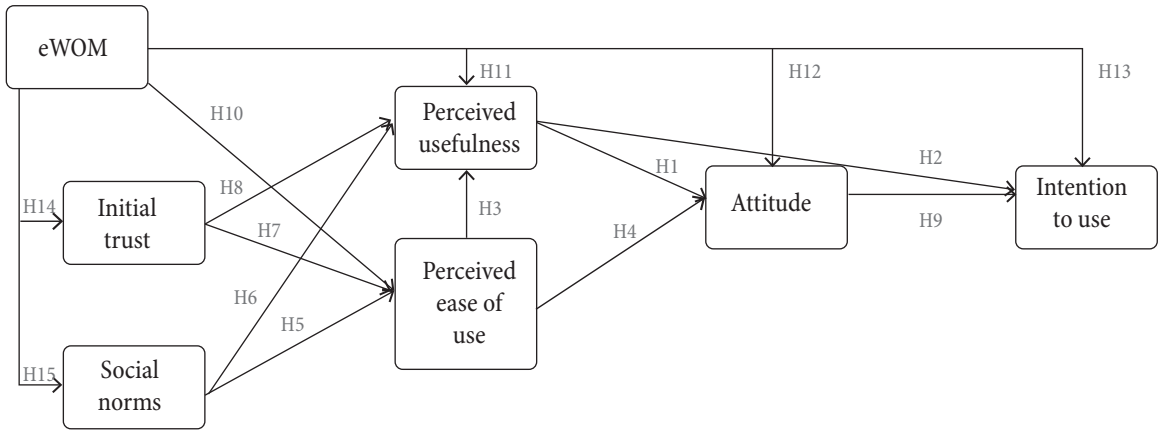
$$n = \frac{Z^2\, p(1-p)}{e^2}$$

In this formula is the desired level of accuracy, p is the rated share of the population that meets the criteria of the research, and z represents the corresponding z-value from the table. Since there is no specific reason to assume that the majority of the respondents would or would not use mobile banking before the analysis itself, we take the p to be 0,5. With the 95% level of trust and the 5% error allowance, the valid sample size should be at least 385.

The total number of respondents that took part in the study is 501. All the respondents answered all the questions, so there are no missing values in the database. From the entire sample, 23 respondents said they did not use social media. With regard to the goal of the research, and that is establishing the social media eWOM effect on mobile banking, these respondents' answers were not taken into account. So the sample for the research includes the total of 478 respondents. This number of respondents is somewhat higher than the number reached through Cochran formula, which will slightly increase the accuracy in the conclusion making process.

Looking at the demographic characteristics of the sample users of social media who expressed their opinion on mobile banking through the study, we can notice that the majority of the sample is the population aged 21-35 (65,7%) that vastly uses mobile application services for their activities. When it comes to education, most people are college-educated (50,8%), then come the people with secondary-school education (29,7%) and those with a two-year degree (11,9%). Also, as many as 323 respondents, 67,6% of the total number, are the employed respondents, whereas the retired population is the scarcest (0,8%). The employed respondents are the more representative sample because, searching for ways to improve the management of their finances, they regularly use mobile banking and other sorts of digital technologies, unlike other respondent

Picture 1. Used model adapted from [20]



structures. Asked if they use or have ever used mobile banking on their smart phone, 338 respondents replied affirmatively, which means 70,7% of the total sample.

In order to check the validity of the study as a measuring instrument, as well as the suitability of the measured indices for measuring latent variables in the model, the CFA – confirmatory factor analysis will be carried through. We confirm the validity of the questionnaire and the gathered data by testing several factors such as internal reliability of the test, suitability of the data for factor analysis, convergent validity, and discriminant validity. Latent variables in this work include eWOM, perceived simplicity of mobile banking use, perceived usefulness of mobile banking, attitudes, social norms, intention of use, trust, and they were all measured by using the questions asked in this questionnaire. Table 1 features the questions used to describe latent variables with the belonging mean values of the responses, standardized estimates of factor loadings, t-values and the values of the coefficient of determination R^2.

Internal reliability of the test is checked based on the value of Cronbach's alpha coefficient whose values

Table 1. Values of the main statistics for the measurement model: mean value, factor loading, t-value and R^2

Latent variable	Questionnaire item	Mean value	Factor loading	t-value	R^2
Perceived usefulness	Mobile banking would speed up my banking activities	6,00	0,945	-	0,893
	Mobile banking would come in handy for completing my banking activities	6,02	0,936	40,918	0,875
	I think using mobile banking would improve the way I complete my banking activities	5,99	0,918	37,798	0,843
	Mobile banking would make completing my banking activities easier	6,05	0,933	40,314	0,871
Perceived simplicity of use	Interaction with mobile financing services is straightforward and clear	5,48	0,845	-	0,715
	It would be easy to learn how to use mobile banking	5,91	0,88	24,995	0,775
	It's easy for me to manage the services of mobile banking	5,84	0,888	25,36	0,788
	I think I can easily become skilled at using mobile banking	6,10	0,85	20,235	0,722
Social norms	People I care about would suggest using mobile phone payment services	5,66	0,926	-	0,857
	People I care about would consider mobile phone payment services useful	5,76	0,919	30,942	0,845
	People I care about would think using mobile phone payment services is a good decision	5,68	0,869	27,114	0,756
	There are many people around me who use mobile phone payment services	5,44	0,591	14,682	0,35
Trust	I think mobile banking service is reliable	5,62	0,845	-	0,714
	Mobile banking service is created to help the clients	5,90	0,843	22,858	0,71
	I think banks fulfill their obligations in the field of mobile banking	5,44	0,849	23,712	0,721
	I believe my bank offers a secure mobile banking service	5,75	0,857	23,534	0,734
EWOM	I will discuss the advantages of mobile banking with the people I know on social media	4,06	0,522	-	0,273
	I will advocate the positive aspect of mobile banking on social media	4,25	0,614	20,635	0,377
	If anybody asks me about mobile banking on social media, I will definitely recommend it	5,26	0,973	9,66	0,946
Users' opinions	Using mobile banking is in line with my lifestyle	5,69	0,797	_	0,635
	Using mobile banking corresponds with the majority of services banks offer in their branch offices	5,60	0,806	19,688	0,65
	Using mobile payment is a good idea	6,22	0,902	23,088	0,814
	Using mobile payment is useful	6,21	0,931	20,675	0,867
Use intention	I am going to use mobile banking services	6,01	0,944	-	0,891
	I want to get more information on mobile banking	5,70	0,594	15,284	0,353
	I am going to use mobile banking services to make payments	5,90	0,926	37,195	0,857
	I want to manage my bank accounts through mobile banking	5,99	0,933	32,605	0,871

for each group of questions should not be less than 0,7. Whether the data is suitable for factor analysis is checked by Kaiser-Mayer-Olkin (KMO) test of the sample adequacy and by the Bartlett test of sphericity. KMO index should be higher than 0,6 while the significance of Bartlett test should be less than 0,05. Composite reliability (CR) and the average variance extracted (AVE) are the indices of convergent validity. The referent values for these two factors are CR > 0,7 and AVE > 0,5. The discriminatory validity is established by the correlation between the latent variables. It is confirmed if the value of AVE is higher than the squared correlation between the corresponding variables. Based on the values of validity indices given in the Table 2 we get to the conclusion that the questionnaire is reliable and valid.

Table 3 contains some of the most common indices that denote the quality of the model. Although the value $\chi^2 = 1066{,}28$ is statistically significant at the level $p < 0{,}01$ ($df = 292$), judging by the rest of the indices, it can be concluded that the quality of the measurement model is good.

After having assessed both the questionnaire validity as a measuring instrument and the suitability of the model by the confirmatory factor analysis, in order to test the direct influence eWOM has on social media on clients' opinions and intentions of using mobile banking services, we shall use the SEM – structural equation model. Table 4 presents the standardized path coefficients, whereas the coefficients of model fit are given in Table 5.

From the results it is deductible that the hypotheses H6, H8 and H11 are not acceptable even at the significant level of 10%. This result implies that based on the respondents' answers in the questionnaire we cannot conclude that social norms, initial trust and eWOM have any confirmed influence on the perceived usefulness of mobile banking.

The results showed that the perceived usefulness has a positive effect both on the users' opinions ($\beta = 0{,}313$, $p < 0{,}01$, and on their intentions of using mobile banking in the future ($\beta = 0{,}200$, $p < 0{,}01$). Likewise, perceived simplicity of use has a positive effect on perceived usefulness ($\beta = 0{,}716$, $p < 0{,}01$) and the users' opinions ($\beta = 0{,}247$, $p < 0{,}01$). When it comes to social norms, it turned out they have a positive effect on the perceived simplicity of use ($\beta = 0{,}510$, $p < 0{,}01$), but the positive effect of social norms on the perceived usefulness could not be confirmed herein. The same conclusion is reached about the effect on the perceived simplicity of use where the existence of the positive influence is confirmed ($\beta = 0{,}942$, $p < 0{,}01$), whereas the hypothesis about the positive influence on the perceived usefulness is rejected. The expected result that the users' positive opinion has a positive effect on the intention of using mobile banking has been confirmed with the high value of the factor $\beta = 0{,}905$ ($p < 0{,}01$). The vital group of hypotheses for our research includes the

Table 2. Correlation matrix, Cronbach's alpha, CR, AVE, KMO, Bartlett significance

	PU	PSU	SN	Trust	EWOM	UO	UI	CR	AVE	KMO	Bartlett significance
PU	**0,967**							0,964	0,871	0,855	0,000
PSU	0,816	**0,914**						0,923	0,750	0,829	0,000
SN	0,645	0,778	**0,891**					0,901	0,702	0,812	0,000
Trust	0,691	0,815	0,729	**0,909**				0,911	0,720	0,847	0,000
EWOM	0,450	0,507	0,563	0,629	**0,854**			0,760	0,532	0,650	0,000
UO	0,780	0,815	0,697	0,847	0,563	**0,894**		0,981	0,741	0,782	0,000
UI	0,813	0,785	0,650	0,769	0,554	0,858	**0,901**	0,918	0,743	0,821	0,000

Note: Diagonal entries are Cronbach's alpha coefficients; CR = composite reliability; AVE = average variance extracted; KMO = Kaiser-Mayer-Olkin statistics; PU = perceived usefulness; PSU = perceived simplicity of use; SN = social norms; UA = users' opinions; UI = use intention.

Table 3. Measures of goodness of fit for the measurement model

Statistics	χ^2/df	*AGFI*	*CFI*	*NFI*	*TLI*	*RMSEA*
Obtained values	3,652	0,805	0,945	0,926	0,933	0,075
Suitable values	$1 \leq \chi^2/df \leq 5$	$AGFI \geq 0{,}8$	$CFI \geq 0{,}9$	$NFI \geq 0{,}9$	$TLI \geq 0{,}9$	$RMSEA \leq 0{,}08$

Note: df = number of degrees of freedom; AGFI = adjusted goodness of fit index; CFI = comparative fit index; NFI = normed fit index; TLI = Tucker-Lewis index; RMSEA = Root mean square error approximation.

Table 4. Results of the structural model

Path	Standardized coefficient	t – value	Hypothesis
PU ->UO	0,313***	5,583	H1 - accepted
PU->IU	0,200**	2,519	H2 - accepted
PSU->PU	0,716***	7,459	H3 - accepted
PSU->UO	0,247***	3,789	H4 - accepted
SN->PSU	0,510***	7,505	H5 - accepted
SN->PU	0,067	0,672	H6 - rejected
Trust->PSU	0,942***	5,754	H7 - accepted
Trust->PU	0,148	0,678	H8 - rejected
UO->IU	0,905***	5,521	H9 - accepted
EWOM->PSU	-0,555***	-2,687	H10 - accepted
EWOM->PU	-0,109	-0,460	H11 - rejected
EWOM->UO	0,517***	7,347	H12 - accepted
EWOM->IU	-0,208*	-1,830	H13 - accepted
EWOM->SN	0,764***	9,079	H14 - accepted
EWOM->Trust	0,903***	9,260	H15 - accepted

Note.*,**,***, denote the levels of significance from 10%, 5%, 1%, respectively for rejecting a hypothesis; PU = perceived usefulness; PSU = perceived simplicity of use; SN = social norms; UO = users' opinions; IU = intention of use.

Table 5. Measures of goodness of fit for the structural model

Statistics	χ^2/df	*AGFI*	*CFI*	*NFI*	*TLI*	*RMSEA*
Model values	4,124	0,801	0,935	0,917	0,924	0,079
Reference values	$1 \leq \chi^2/df \leq 5$	*AGFI* ≥ 0,8	*CFI* ≥ 0,9	*NFI* ≥ 0,9	*TLI* ≥ 0,9	*RMSEA* ≤ 0,08

Note: df = number of degrees of freedom; AGFI = adjusted goodness of fit index; CFI = comparative fit index; NFI = normed fit index; TLI = Tucker-Lewis index; RMSEA = Root mean square error approximation.

hypotheses H10 – H15. These hypotheses establish the positive influence eWOM has on the other factors of the research. Except for the perceived usefulness, as we have already mentioned, the results confirm the positive effect of eWOM on all the other factors.

Comparing the results reached herein with the [2] results, these authors rejected the hypothesis that trust has a positive effect on the perceived simplicity of use, while this research has accepted that hypothesis, but rejected the one about the positive effect the trust has on the perceived usefulness. Besides the mentioned hypothesis, this research has also rejected the hypotheses about the influence of social norms, initial trust and eWOM on the perceived usefulness of mobile banking.

Discussion

Accepted hypotheses 1 and 2 show that perceived usefulness is a strong predictor of user behavior [19], and also one of the most important implementation tasks [9], which influences a positive attitude and desire to use a mobile banking service. Accepted hypotheses 3 and 4 implicate that managers in Serbia should concentrate on emphasizing points of interest and benefits offered by the mobile banking application [32], demonstrating that the applications are not complicated to use and that they are possibly available for testing before using [15] if they want to attract new users [27], which can be done by uploading video demonstrations on social media [33] and by providing live-chat and video calls of support to the users [24]. Hypothesis 5 concerning the positive impact of social norms on perceived ease of use was confirmed, while the same impact on perceived utility in Hypothesis 6 was rejected. That shows, in the mentioned sample that the users' perception of other people's opinion could have influence on whether a user considers usage of the application easy, which once again stresses the necessity of applications being simple to use. Hypothesis 7 on the positive influence the initial trust has on the simplicity of usage is accepted, but the same influence on the perceived usefulness in Hypothesis 8 is rejected, which means that promotional efforts of the management should be directed, among other things, towards pointing out that the mobile banking application is safe, worth the user's

trust [3] and that there is a policy of protection from financial losses [18]. Accepted hypothesis 9 confirms that users form opinions and take certain attitudes before they evaluate the benefits of new channels and services under the influence of social interaction and media-propagated messages, and that is why it is important that the bank directs its efforts, among other things, at eWOM [26]. The analysis of the hypotheses 10-15 has shown that the mutual interactions among the users of mobile banking can influence the perception of simplicity of its use, the socially acceptable behavior, initial trust that users can have towards mobile banking, as well as the opinions and intentions of clients to use it. However, in the mentioned sample, eWOM does not have any notable influence on the perceived usefulness, which the authors to a certain degree relate to the subjective feeling of the present and potential users about how purposeful mobile banking is and how useful it can be in their lives. The fact that we can get online information on how useful mobile banking is to a certain number of users, it does not necessarily mean it will be useful to us as well. Promotional efforts should be directed, among other things, at pointing to the fact that the interface is easy to master and use and that the application is safe and trustworthy, so that promotional messages would help banking industry to attract new clients, keep the present ones, and expand the usage of mobile banking. In this way the emphasis is put on the factors which have proved to be important in this research, the ones that eWOM has influence on. The research indicates the need for managers to capture the opinion leaders who have a normative power to exert their influence on the others in order to attract mobile banking users and stimulate them to "discuss" the mentioned factors on the Internet.

Limitations and future research

Due to the fact that the sample of respondents is from the territory of Serbia, the interpretation of the results may not be relevant for the other developing countries, which is one of the limitations of this study. Also, almost 74% of the respondents are under 35 years old, so the sample does not include all age categories equally. Another limitation is that the model is cross sectional, meaning that the users' perceptions and intentions which are variable, are measured at one point in time, so the longitudinal survey would be a better option for future research. Likewise, demographic factors were not taken into account, so future research could consider demographic constructions like gender, age, income, education, etc. Finally, the research can be expanded so that it includes some other factors influenced by eWOM, whereas significant information can be received by doing research from the angle of factors influencing the user's wish to spread eWOM.

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References

1. Abdinoor, A. & Mbamba, U. O. L. (2017). Factors influencing consumers' adoption of mobile financial services in Tanzania, *Cogent Business and Management*, 4, 1-19.
2. Amron, A., Usman, U. & Mursid, A. (2018). The role of electronic word of mouth, conventional media, and subjective norms on the intention to purchase Sharia insurance services, *Journal of Financial Service Marketing,* 23, 218-225.
3. Audi, M., F., Wahbi, M., Abdallah, S., Kassem, L., Jaber, N. & Makkawi, R. (2016). Adoption of Mobile Banking Applications in Lebanon, *Journal of Internet Banking and Commerce*, 21 (1).
4. Awasthi, P. & Sangle, P. S. (2013a). The importance of value and context for mobile CRM services in banking, *Business Process Management Journal,* 19 (6), 864-891.
5. Awasthi, P. & Sangle, P. S. (2013b). Concerns vital for mobile CRM in banking: a qualitative study, *International Journal of Electronic Customer Relationship Management,* 7 (1), 45-67.
6. Balabanoff, G. A. (2014). Mobile Banking Applications: Consumer Behavior, Acceptance and Adoption Strategies in Johannesburg, South Africa (RSA), *Mediterranean Journal of Social Sciences*, 5, (27), 247-258.
7. Barati, S. & Mohammadi S. (2009, October). An Efficient Model to Improve Customer Acceptance of Mobile Banking, *Proceedings of the World Congress on Engineering and Computer Science 2009*, 2, Symposium conducted at the meeting in San Francisco, USA.
8. Changchit, C., Lonkani, R., & Sampet, J. (2017). Mobile Banking: Exploring Determinants of Its Adoption, *Journal of Organizational Computing and Electronic Commerce*, 27, (3), 239-261.
9. Cheng, F. M., Phou, S. & Phuong, S. (2018, December). Factors Influencing on Consumer's Digital Payment Adaptation – a Comparison of Technology Acceptance Model and Brand

Knowledge, *Proceedings of the 21st Asia-Pacific Conference on Global Business, Economics, Finance and Social Sciences (AP18Taiwan Conference),* Symposium conducted at the meeting in Taipei-Taiwan.

10. Cvijović, J., Kostić-Stanković M. & Reljić, M. (2017). Customer relationship management in banking industry: Modern approach, *Industrija*, 45 (3), 151-165.
11. Hadžić, M., & Mladenović, M. (2014, April). Mobilno bankarstvo u Srbiji, stanje i potencijal, *Sinteza 2014 - Impact of the Internet on Business Activities in Serbia and Worldwide,* Symposium conducted at the meeting of Singidunum University, Belgrade, Serbia.
12. Hamidi, H. & Safareyeh, M. (2018). A model to analyze the effect of mobile banking adoption on customer interaction and satisfaction: a case study of m-banking in Iran, *Telematics and Informatics,* 38, 166-181.
13. Hanafizadeh, P., Behboudi, M., Koshksaray, A. A. & Tabar, M. J. S. (2014). Mobile-banking adoption by Iranian bank clients, *Telematics and Informatics*, 31, 62-78.
14. Hooper, D., Coughlan, J. & Mullen, M. R. (2008). Structural Equation Modelling: Guidelines for Determining Model Fit, *Electronic Journal of Business Research Methods,* 6 (1), 53-60.
15. Hsu, C.-L., Wang, C.-F. & Lin J, C-C. (2011). Investigating customer adoption behaviors in Mobile Financial Services, *International Journal of Mobile Communications*, 9 (5), 477-494.
16. Karjaluoto, H., Shaikh, A. A., Saarijarvi, H. & Saraniemi, S. (2018). How perceived value drives the use of mobile financial services apps, *International Journal of Information Management,* 47, 252-261.
17. Karma, N. G., Ibrahim, S. B. & Ali, A. H. (2014). Key Factors Affecting Mobile Banking Adoption Among Banks'customers in Sudan, *International Journal of Liberal Arts and Social Science,* 2 (6), 112-122.
18. Lin, H.-F. (2013). Determining the relative importance of mobile banking quality factors, *Computer Standards and Interfaces,* 35 (2), 195–204.
19. Maduku, D. K. (2014). Behavioral intention towards mobile banking usage by South African retail banking clients, *Investment Management and Financial Innovations,* 11 (3), 37-51.
20. Mehrad, D. & Mohammadi, S. (2017). Word of Mouth impact on the adoption of mobile banking in Iran, *Telematics and Informatics*, 37 (7), 1351-1363.
21. Mostafa, A. A. N., & Eneizan, B. (2018). Factors Affecting Acceptance of Mobile Banking in Developing Countries, *International Journal of Academic Research in Business and Social Sciences*, 8 (1), 340–351.
22. Noori, B. (2015). An Analysis of Mobile Banking User Behavior Using Customer Segmentation, *International Journal of Global Business,* 8 (2), 55-64.
23. Payne, E. M., Peltier, J. W. & Barger, W. A. (2018). Mobile banking and AI enabled mobile banking: The differential effects of technological and non-technological factors on digital natives' perceptions and behavior, *Journal of Research in Interactive Marketing*, 12 (3).
24. Rajaobelina, L., Brun, I., Tep, S. P. & Arcand, M. (2018). Towards a better understanding of mobile banking: the impact of customer experience on trust and commitment, *Journal of Financial Service Marketing,* 23, 141-152.
25. Riivari, J. (2005). Mobile banking: A powerful new marketing and CRM tool for financial services companies all over Europe, *Journal of Financial Services Marketing,* 10 (1), 11–20.
26. Sangle, P. S & Awasthi, P. (2011). Consumer's expectations from mobile CRM services: a banking context, *Business Process Management Journal*, 17 (6), 898-918.
27. Shaikh, A. A. & Karjaluoto, H. (2015). Consumers' perceptions of mobile banking continuous usage in Finland and South Africa, *International Journal of Electronic Finance,* 8, (2/3/4), 149-168.
28. Shankar, A., Jebarajakirthy, C. & Ashaduzzaman, M. (2020). How do electronic word of mouth practices contribute to mobile banking adoption, *Journal of Retailing and Consumer Services,* 52, 1-14.
29. Shih, K-H. & Lin C-Y. (2015). Is mobile banking a competitive weapon? *International Journal of Electronic Finance,* 8, (2/3/4), 189-201.
30. Singh, S. & Rahul, M. (2010). Effectiveness of CRM in Banking Services with Reference to ATM Services in NCR Delhi, *Asia-Pacific Business Review*, 6 (2), 141-149.
31. Smajlovic, E. (2007, June). CRM application in function to advance the quality of banks services, *5. Naučno-stručni skup sa sa međunarodnim učešćem KVALITET 2007,* Symposium conducted at the meeting in Neum, BandH.
32. Sohail, M., S. & Al-Jabri, I., M. (2014). Attitudes towards mobile banking: are there any differences between users and non-users? *Behaviour and Information Technology*, 33 (4), 335-344.
33. Teo, A-C., Tan, G. W-H., Cheah, C-M., Ooi, K-B. & Yew, K-T. (2012). Can the demographic and subjective norms influence the adoption of mobile banking? *International Journal of Mobile Communications,* 10 (6), 578-597.
34. Torres, P. & Augusto, M., (2018). Effects of brand attitude and eWOM on consumers' willingness to pay in the banking industry: Mediating role of consumer-brand identification and brand equity, *Journal of Retailing and Consumer Services,* 42, 1–10.
35. Vahdati, H. & Nejad, S., H., M. (2016). Brand Personality Toward Customer Purchase Intention: The Intermediate Role of Electronic Word-Of-Mouth and Brand Equity, *Asian Academy of Management Journal,* 21 (2), 1–26.
36. Yolanda Y.Y. Chan & E.W.T. Ngai. (2011). Conceptualising electronic word of mouth activity: An input process output perspective, *Marketing Intelligence and Planning,* 29 (5), 488-516.

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THE IMPACT OF EXTERNAL FACTORS ON IMPLEMENTATION OF FRANCHISING AS A STRATEGY OF INTERNATIONALIZATION

Uticaj eksternih faktora na primenu franšizinga kao strategije internacionalizacije

Abstract

The aim of the paper is to emphasize the importance of franchising as a strategy of internationalization for SMEs and to identify external factors that can have an impact on the implementation of franchising as an internationalization strategy in the Republic of Serbia. The paper highlights the impact of external factors that are related to economic development and geographical and cultural distance between countries of origin of the franchisor and the franchisees on the implementation of franchising as an internationalization strategy. This paper is the first study on the impact of external factors on the implementation of franchising as a strategy of internationalization for SMEs from the Republic of Serbia. The findings show that external factors that are related to economic development and geographical and cultural distance between countries of origin of the franchisor and franchisees have an impact on the implementation of franchising as a strategy of internationalization. Franchise SMEs from the Republic of Serbia decide to implement franchising as an internationalization strategy in the markets of those countries that are at a similar level of economic development, which are geographically closer and that have a similar culture as the Republic of Serbia.

Keywords: *franchising, internationalization, SMEs, external factors, franchisee, franchisor.*

Sažetak

Cilj rada je da se naglasi značaj franšize kao strategije internacionalizacije za mala i srednja preduzeća i da se identifikuju eksterni faktori koji mogu uticati na primenu franšizinga kao strategije internacionalizacije u Republici Srbiji. U radu se ističe uticaj eksternih faktora iz domena ekonomskog razvoja i geografske i kulturne udaljenosti između zemalja iz kojih potiču davalac i korisnici franšize na implementaciju franšizinga kao strategije internacionalizacije. Ovaj rad je prva studija o uticaju eksternih faktora na implementaciju franšizinga kao strategije internacionalizacije za MSP iz Republike Srbije. Rezultati pokazuju da eksterni faktori iz domena ekonomskog razvoja i geografske i kulturne udaljenosti između zemalja iz kojih potiču davalac i korisnik franšize utiču na implementaciju franšizinga kao strategije internacionalizacije. Franšizna mala i srednja preduzeća iz Republike Srbije se odlučuju za implementaciju franšizinga kao strategije internacionalizacije na tržištima zemalja koje su na sličnom nivou ekonomskog razvoja, koje su geografski bliže i imaju sličnu kulturu kao Republika Srbija.

Ključne reči: *franšizing, internacionalizacija, MSP, eksterni faktori, korisnik franšize, davalac franšize.*

Introduction

Small and medium-sized enterprises (SMEs) are getting more and more attention, primarily because of their business flexibility and innovation in the face of a changing environment. An increasing number of SMEs decide to enter the foreign markets with the aim of expanding their business activities and achieving higher profits. Franchising is one of the strategies of internationalization that is especially suitable for SMEs, bearing in mind their limited financial and managerial resources. Most of the research in the field of franchising is related to the United States and large multinational companies, so it is important to pay attention to the analysis of the franchise business concept in less developed countries and to the implementation of franchising as an internationalization strategy by SMEs. Modern business conditions require that enterprises analyze foreign markets systematically and continuously in order to select the most favorable foreign market in which they will conduct their business activities. The implementation of franchising as an internationalization strategy for SMEs can be influenced by a number of external factors. This paper will pay particular attention to the following factors: economic development of the country and geographical and cultural distance between the countries of origin of the franchisor and the franchisees.

The aim of the paper is to emphasize the importance of franchising as a strategy of internationalization for SMEs and to identify external factors that can have an impact on the implementation of franchising as a strategy of internationalization in the Republic of Serbia. In the first part of the paper, the author provides an overview of the literature in order to obtain insight into the importance of franchising as a business concept and the selection of a foreign market in the internationalization of business activities. The second part of the paper introduces the hypotheses that will be tested and the methodology that will be used in the paper. The third part of the paper is devoted to empirical research, where the subjects of the research are franchise SMEs from the Republic of Serbia. The author analyzes the influence of external factors on the implementation of franchising as an internationalization strategy by using numerous statistical techniques. After summarizing the empirical results, the author makes relevant conclusions.

Brief theoretical review

Franchising can be seen as an opportunity for all those who want to become self-employed, since every franchise system consists of a franchisor who grants the right to use its brand and business concept to a network of franchisees, i.e., semiautonomous, usually small firms (Watson & Kirby, 2004). Franchising as a business concept improves efficiency and allows economies of scale to ensure cost minimization for both the franchisor and the franchisee (Bradach, 1997). Shane and Hoy (1996) point out that the creation of a franchise network is an entrepreneurial act. Over the past several decades, the number of franchises around the world has increased significantly, bearing in mind that franchising offers better financial results than alternative organizational forms (Nijmeijer, Fabbricotti & Huijsman, 2014).

The initial development of franchising is associated with the United States, after which the franchise business concept has experienced an expansion in Europe and the rest of the world (Price, 1997). Franchise research has a fairly short history, bearing in mind that the oldest known and most frequently quoted studies date back to the late 1960s (Grunhagen & Mittelstaedt, 2005). The largest number of studies in the field of franchising relates to the US, where quantitative research methods are dominant and are considered more valid than qualitative methods (Stanworth, 1999). It has been pointed out that quantitative methods provide a "scientific truth" and are preferred in academic circles because they are considered to lead to reliable and verifiable findings and conclusions (Schoenberger, 1991). In the field of franchising, there are also instances of qualitative research that most often involve individual case studies (Quinn & Doherty, 2000) or a comparison of several franchise systems (Merrilees & Frazer, 2006). Nevertheless, Shane (1998) emphasizes that qualitative methods are less accepted because they are considered inductive and subjective, while quantitative methods of research are considered deductive and objective. Combined research methods (combination of

quantitative and qualitative research) were also used for analysis in the field of franchising (Morgan, 1997). The largest number of conducted franchise studies relates to the globally known multinational companies that use the franchise concept to expand their business, so the attention should also be paid to franchising as a strategy for the internationalization of SMEs.

Franchising has been used as a business concept in the Republic of Serbia since the mid-1970s, when the first American franchises entered the market: Coca-Cola, Avis, Diners Club International, Intercontinental, Hyatt, American Express, McDonald's and so forth. After that, domestic enterprises saw the benefits of the franchise business concept, and in the 1980s and 1990s, domestic franchise systems were developed: Montenegro Express, Tigar, Pekabeta, C Market, Yumco and so forth. The next phase in the development of franchising in the Republic of Serbia began at the end of the last decade. At the end of 2007, the Franchising Center as part of the Chamber of Commerce and Industry of Serbia was established as a central place where all interested parties could receive information about franchising in the Republic of Serbia (Chamber of Commerce and Industry of Serbia, 2008). Compared to the developed countries, citizens' awareness of the importance of franchising as a business concept is still at a low level in the Republic of Serbia, and it is necessary to make additional efforts to popularize the franchise business concept, bearing in mind the many benefits that it offers (Stefanović & Stanković, 2013).

How and why franchisees expand internationally is the focus of a large number of researchers (Alon, Madanoglu & Shoham, 2017; Madanoglu, Alon & Shoham, 2017). There is extensive literature on international franchising (e.g., Aliouche & Schlentrich, 2011; Altinay, Brookes, Madanoglu & Aktas, 2014; Dant et al., 2011; Elango, 2007; Grace & Weaven, 2011; Hoffman, Munemo & Watson, 2016; López-Bayón & López-Fernández, 2016; Rosado-Serrano & Paul, 2018; Wu, 2015). However, there are still few studies addressing the factors that influence the use of franchising as an internationalization strategy. Therefore, this study makes an exceptional contribution to complementing the existing research and is of great importance for future research in the field of international franchising.

The selection of the market is an integral part of the process of formulating the strategy of internationalization of SMEs (Đorđević, 2005, p. 84). In the literature, there are many approaches and models for the selection of foreign markets that are essentially similar, but with certain differences. Walvoord's (1980, p. 83) model consists of four stages of market research: research on a macro level, research of the market-product relationship, research on a micro level, and research of target markets by priority. Root (1989, p. 45) has defined a model for the selection of foreign markets that starts with all available countries, after which it narrows the focus to prospective countries, then to countries of high market potential, in order to finally select the most favorable countries for internationalization. In selecting a foreign market, enterprises need to answer two questions: whether to enter the market incrementally (the "waterfalls" approach) or simultaneously (the "splash" approach) and whether the entry will be concentrated or diversified to a number of international markets (Hollensen, 2007, p. 260). An incremental approach to enter a foreign market implies that the enterprise first enters a key market in order to gain experience in international business, and then gradually entering other foreign markets. Alternatively, an enterprise may decide to enter a large number of markets simultaneously in order to achieve rapid international expansion. An incremental entry, especially in small markets, is preferable when an enterprise lacks experience in foreign markets and wants to gradually engage in international business. If the enterprise is small and has limited resources or is inversely at risk, it will prefer to enter one or a limited number of markets and gradually expand internationally. Some enterprises prefer to quickly enter the global marketplace in order to take advantage of the growing chances and prevent competition. Simultaneous access to foreign markets allows the enterprise to achieve economies of scale in production and marketing through the integration and consolidation of operations in a large number of markets. However, this approach requires extensive financial and managerial resources and implies a high risk for the business (Hollensen, 2007, p. 262).

A modern business environment requires a systematic and continuous research of foreign markets. However, the largest number of enterprises are still holding onto an intuitive way of selecting international markets, which can cause many problems due to significant differences between countries (Hollensen, 2007, p. 83). When choosing a foreign market where they will conduct their business activities, franchise SMEs take into account a number of internal and external factors. The focus of the analysis of this paper will be on external factors that are most often mentioned in the literature: economic development of the country and geographical and cultural distance between the countries of origin of the franchisor and the franchisees. The assessment of a foreign market should begin with an analysis of economic factors that relate to the size and potential of the foreign market. In order to make a preliminary assessment of market potential, the initial screening of the market must be effective and effective (Czinkota & Ronkainen, 2001, p. 93). Gross domestic product (GDP) is most often used as an indicator of market potential. The primary indicator for purchasing power analysis in a respective market is GDP per capita (Czinkota & Ronkainen, 2001, p. 100).

Geographical distance was one of the first mentioned factors that influence the selection of the international market and the internationalization of SMEs that use franchising. In international terms, it is most often determined by the number of kilometers between the countries of origin of the franchisor and the franchisees. Since it is not possible to accurately determine the physical location of the franchise units, the geographical distance is determined as a kilometer distance from the capital city of the country of origin of the franchisor to the capital of the country where the franchise unit is located (Baena, 2012). Franchisees are more familiar with the geographically closer markets and will initially opt for international expansion into the markets of neighboring countries. For example, U.S. franchisors that plan to expand their business internationally most often choose Canada and Mexico as their primary foreign markets for doing business (Hollensen, 2004, p. 219). Franchise SMEs are often limited to neighboring countries, as they do not have sufficient human and financial resources needed for a comprehensive analysis and selection of target markets (Hollensen, 2004, p. 244). In addition to this, transaction costs, transport and delivery costs, partner selection costs and costs of technology and raw material transfers from the franchisors to the franchisees increase with greater geographic distance (Scarborough, 2012, p. 403; Baena, 2012). It can be concluded that smaller franchise enterprises will first opt for internationalization through franchising in the geographically closer markets. As they mature (in terms of the number of years of business) and gain international experience (in terms of the number of years in international business), franchise SMEs can make a decision to enter the geographically more distant markets (Buckley & Ghauri, 1999, p. 28).

Cultural distance is described as a difference in cultural values between countries (Anderson & Gatignon, 1986; Eroglu, 1992; Rothaermel, Kotha & Steensma, 2006). Fladmoe-Lindquist and Jacque (1995) point out that franchising as an internationalization strategy is used to enter markets with a greater cultural distance, since it allows franchisors to transfer the responsibility for managing local operations to the franchisees. Nevertheless, the literature is dominated by evidence suggesting that there is a negative correlation between the cultural distance and the use of franchising as an internationalization strategy (Baena, 2012). In fact, it is pointed out that franchisors generally prefer countries that are culturally and geographically closer to the country from which they come from (Alon, 2006). This is primarily because great cultural differences between the country of origin of the franchisor and the country of origin of the franchisee can bring internal uncertainty and business problems (Anderson & Gatigon, 1986), which is particularly evident if we observe the cultural gap between the Western and Eastern culture (Tes & Pan, 1997; Koch, 2001). As cultural distance increases, transaction costs and costs of adapting the franchise package to the local market conditions also increase (Eroglu, 1992). In addition, as there are greater differences in business ethics and practices between the countries of origin of the franchisor and the franchisees, costs of negotiating with potential customers, monitoring costs and communication costs will also be greater (Eroglu, 1992; Fladmoe-Lindquist, 1996; Alon & McKee,

1999; Burton, Cross & Rhodes, 2000; Huszagh, Huszagh & Mclntyre, 1992).

In order to define cultural distance, Geert Hofstede developed a model of intercultural dimensions. According to Hofstede's theory, several studies have confirmed that the culture of a domestic country has a major impact on the business activities of the enterprise abroad (Tes & Pan, 1997; Koch, 2001). Hofstede (1980, p. 25) points out that culture is a collective programming of consciousness that distinguishes members of one group of people from others. Culture includes value systems, and values are the building blocks of culture (Hofstede, 1980, p. 21). Culture is a very important factor in international markets. It is often quite difficult to communicate with business associates if they do not speak the same language, as well as to understand the attitudes and values of customers in the foreign market. Culture is not something that stays the same forever, but it changes over time (Hollensen, 2007, p. 217). Differences in culture can be viewed through the four key dimensions of culture (Hofstede, 1980; Hofstede & Bond, 1988): individualism versus collectivism ("I" instead of "We"), power distance (equality level in society), uncertainty avoidance (the need for formal rules and regulations), masculinity versus femininity (attitudes towards achievements, the role of men and women). Later, the fifth and sixth dimensions were added: long-term versus short-term orientation and indulgence versus restraint (Baena, 2012).

Hypotheses and methodology

In accordance with the defined research objective, theoretical and empirical research methods were used in the paper. The method of description was used to understand the state and dynamics of activities of franchise SMEs that implement franchising as an internationalization strategy. It is also important to apply analysis and synthesis of knowledge obtained by studying the scientific and professional literature of authors who have largely contributed to the research into the strategies for internationalization of SMEs and franchising. The following data sources were used for the application of the inductive-deductive method: the foreign and domestic literature in the relevant field, official reports of relevant national and international organizations and data collected via Internet and official websites of companies that are the subject of analysis. Data obtained through empirical research were of special relevance to the understanding of the importance of franchising as a strategy of internationalization for SMEs. Subjects of the research are franchise SMEs from the Republic of Serbia. The time frame for conducting the empirical research was May-July 2016.

The implementation of a certain internationalization strategy by franchise SMEs is influenced by a large number of internal and external factors. When it comes to the external factors, the following ones will be considered in the paper: economic development of the country, geographical distance and cultural distance between the countries of origin of the franchisor and the franchisees. The level of economic development will be monitored by GDP per capita, based on the World Bank data. The geographical distance will be calculated as the distance in kilometers from the capital city of the country of origin of the franchisor to the capital city of the country from which the franchisee originates. An indicator based on the differences in the dimensions of culture developed by Hofstede will be used to calculate the cultural distance.

H1: External factors that are related to economic development, geographical distance and cultural distance between the countries of origin of the franchisor and the franchisees have an impact on the implementation of franchising as a strategy of internationalization.

For the purposes of this research, a comparison will be made with the aim of determining the difference in the size and character of the impact of external factors between franchise SMEs that implement franchising as an internationalization strategy and franchise SMEs that implement other internationalization strategies.

H2: The size and character of the impact of external factors varies between franchise SMEs that implement franchising as an internationalization strategy and franchise SMEs that implement other internationalization strategies.

A number of statistical methods were used in order to analyze the empirical research results. During the statistical analysis of the collected data, the software package SPSS Statistics 20.0 was used. Before deciding on the application

of an appropriate statistical technique, the normality of the distribution of variables was examined on the basis of the Shapiro-Wilk test and on the basis of histogram analysis, normal probability curve and rectangular diagram. In cases when the data had an asymmetric distribution (Shapiro-Wilk $p < 0.05$) and when it was determined that there were atypical and extreme values, non-parametric alternatives of statistical techniques were used for the statistical analysis. On the other hand, when the data showed a normal distribution, parametric statistical techniques were used. In order to analyze the impact of external factors on the implementation of franchising as an internationalization strategy, simple linear regression was used, followed by multiple linear regression.

For the purpose of performing the standard multiple regression, it was necessary to verify whether there was multicollinearity between the independent variables. Multicollinearity was assessed on the basis of tolerance and VIF values, with acceptable values that spoke in favor of the absence of multicollinearity tolerance>0.10 and VIF<10. The coefficient of determination was used to determine which part of the variance of the dependent variable explained the regression model. The beta coefficient was analyzed to determine the independent variable that contributes the most to the explanation of the dependent variable, while the semipartial correlation coefficient was used to analyze the unique contribution to the prediction of the dependent variable.

T-test of independent samples was applied in order to determine whether there was a difference in external factors between the two groups of SMEs, i.e., franchise SMEs that implement franchising as an internationalization strategy and franchise SMEs that use other strategies. Based on the Levene's test of equality of variance, it was determined whether the variance of results was equal in the two groups of franchise SMEs. When the significance level of the Levene's test was greater than 0.05, the results for the case of equal variances were used, and when the significance level of the Levene's test was less than 0.05, the observed results were calculated for the case when the variances were not equal. ANOVA was applied in order to verify whether there was a difference in external factors between three groups of SMEs, i.e., franchise SMEs that do not operate internationally, franchise SMEs that use franchising and franchise SMEs that implement other internationalization strategies.

Results and discussion

Based on the analysis of the sample, 50% of the analyzed franchise SMEs are small enterprises, 21.9% are micro enterprises and 28.1% are medium-sized enterprises. The results show that 62.5% of the franchise SMEs from the Republic of Serbia operate internationally, while 37.5% operate only in the domestic market. Out of the total number of the analyzed franchise SMEs, 34.4% use export, while 25% use franchising and 3.1% use licensing as an internationalization strategy. If we look only at international franchise SMEs, we can conclude that 40% of franchise SMEs use franchising as an internationalization strategy, while 60% of them opt for other internationalization strategies (export and licensing).

The paper will analyze the external factors that have an impact on the implementation of franchising as an internationalization strategy: economic development of the country, geographical distance and cultural distance. GDP per capita in the Republic of Serbia is lower than the average world GDP per capita and far lower than GDP per capita in OECD countries and EU Member States. In 2015, GDP per capita in the Republic of Serbia was US$ 5,144, which was almost twice less than the average GDP per capita at the global level (US$ 9,996) and about six times less than the GDP per capita in the EU Member States (US$ 31,843) and the OECD countries (US$ 35,783) (The World Bank, 2016).

Franchise SMEs from the Republic of Serbia that implement franchising as an internationalization strategy usually opt for entering the markets of former SFRY (Socialist Federal Republic of Yugoslavia) countries. In fact, as much as 85% of franchise SMEs from the Republic of Serbia have franchise units in one of the countries of the former SFRY. In addition, the majority of enterprises have franchise units in Montenegro and Bosnia and Herzegovina (25% of franchise SMEs from the sample), 20% of them have franchise units in Croatia, 10% in North Macedonia and 5% in Slovenia.

The correlation analysis shows that there is a statistically significant strong negative correlation between the level of economic development of the countries of origin of the franchisor and the franchisees and the implementation of franchising as an internationalization strategy (r=-0.667, p<0.05). In other words, franchise SMEs will decide to conduct their international franchise activities in countries that are at a similar level of economic development to the Republic of Serbia. The difference in the economic development of the countries of origin of the franchisor and the franchisees accounts for 44.5% of the variance in the responses concerning the implementation of franchising as an internationalization strategy. The regression model that relates to the impact of the economic development of the countries of origin of the franchisor and the franchisees on the implementation of franchising as an internationalization strategy is not statistically significant (F=4.802, p=0.071) (Table 1).

Based on the analysis of the geographical distance as an external factor, we can conclude that the nearest franchise units of the analyzed franchise SMEs are in Bosnia and Herzegovina (192 km), while the farthest are in Russia (1,718 km). The average distance between the franchisors from the Republic of Serbia and their international franchisee is 694 km. Correlation analysis shows that there is a moderate negative correlation between the geographical distance between the countries of origin of the franchisor and the franchisees and the implementation of franchising as an internationalization strategy, but that it is not statistically significant (r=-0.355, p>0.05). In other words, franchise SMEs will decide to conduct their international franchise activities in countries that are geographically closer to the Republic of Serbia. The regression model that explains the impact of the geographic distance on the use of franchising as a strategy of internationalization does not provide statistically significant results (F=0.864, p=0.389). The geographical distance accounts for 12.6% variance in responses related to the implementation of franchising as an internationalization strategy (Table 2).

Based on the cultural dimensions and using the procedures developed by Kogut and Singh (1988), the cultural distance will be calculated by using the following formula:

$$CDj = \Sigma_{i=1}^{6} \frac{\frac{(I_{ij} - I_{iRS})^2}{V_i}}{6}$$

where, Iij – index for the i^{th} cultural dimension and jth country, IiRS – index for the i^{th} cultural dimension for the Republic of Serbia, Vi – variance of the index of the i^{th} dimension, CDj – cultural distance of the j^{th} country from the Republic of Serbia.

Based on the cultural dimensions, the cultural distance index is calculated for each of the countries where franchise SMEs from the RS have franchise units. The index of cultural distance indicates that, according to the above-mentioned six dimensions of culture, the Republic of Serbia is most similar to Croatia (CD=0.812), Slovenia (CD=1.537) and Russia (CD=1.548), while there are significant differences when compared to France (CD=2.548) and the Czech Republic (CD=3.437). The correlation analysis shows that there is a strong negative correlation between the cultural distance between the countries of origin of the franchisor and the franchisees and the implementation of franchising as an internationalization strategy (r=-0.674, p>0.05), but it is not statistically significant. Therefore, franchise SMEs will decide to conduct their international franchise activities in countries that are similar to the Republic of Serbia in terms of cultural dimensions. Cultural distance accounts for 45.4% of the variance in responses related to the implementation of franchising as an internationalization strategy. The regression model that analyzes the impact of cultural distance on the implementation of franchising as an internationalization strategy does not provide statistically significant results (F=2.493, p=0.212) (Table 3).

Multiple linear regression was used to estimate the model that encompasses the level of economic development, geographical and cultural distance between countries of origin of the franchisor and the franchisees. The regression model is not statistically significant and accounts for 53.1% of the variance of the number of international franchise units (F=0.377, p=0.798). Out of the above external factors, cultural distance contributes the most to the explanation of the dependent variable.

This is supported by the fact that the cultural distance between the countries of origin of the franchisor and the

franchisees uniquely accounts for 8.1% of the variance in the values of the dependent variable (Table 4).

The results of the study conducted in 2010 on 63 franchise enterprises in Spain are similar to the results of this study. In fact, it has been proven that there is a statistically significant negative correlation between geographical and cultural distance and the number of international franchisees. In other words, franchisors from Spain prefer

Table 1: The impact of economic development on the implementation of franchising as a strategy of internationalization

	R	R-squared	Adjusted R-squared	Std. error of the estimate	
1	0.667	0.445	0.352	5.741	
	Sum of squares	df	Mean square	F	Sig.
Regression	158.267	1	158.267	4.802	0.071
Residual	197.733	6	32.956		
Total	356.000	7			
	B	Std. error	Beta	t	Sig.
(Constant)	14.614	3.268		4.471	0.004
GDP per capita	-0.001	0.000	-0.667	-2.191	0.071

Table 2: The impact of geographical distance on the implementation of franchising as a strategy of internationalization

	R	R-squared	Adjusted R-squared	Std. error of the estimate	
1	0.355	0.126	-0.020	7.202	
	Sum of squares	df	Mean square	F	Sig.
Regression	44.799	1	44.799	0.864	0.389
Residual	311.201	6	51.867		
Total	356.000	7			
	B	Std. error	Beta	t	Sig.
(Constant)	12.041	4.146		2.904	0.027
Geographical distance	-0.004	0.005	-0.355	-0.929	0.389

Table 3: The impact of cultural distance on the implementation of franchising as a strategy of internationalization

	R	R-squared	Adjusted R-squared	Std. error of the estimate	
1	0.674	0.454	0.272	6.086	
	Sum of squares	df	Mean square	F	Sig.
Regression	92.319	1	92.319	2.493	0.212
Residual	111.110	3	37.037		
Total	203.429	4			
	B	Std. error	Beta	t	Sig.
(Constant)	18.274	6.474		2.823	0.067
Cultural distance	-4.693	2.972	-0.674	-1.579	0.212

Table 4: The impact of economic development, geographical and cultural distance on the implementation of franchising as a strategy of internationalization

	R	R-squared	Adjusted R-squared	Std. error of the estimate	
1	0.729	0.531	-0.877	9.770	
	Sum of squares	df	Mean square	F	Sig.
Regression	107.975	3	35.992	0.377	0.798
Residual	95.453	1	95.453		
Total	203.429	4			
	B	Std. error	Beta	t	Sig.
(Constant)	18.201	12.179		1.494	0.375
GDP per capita	0.000	0.001	-0.331	-0.259	0.839
Geographical distance	-0.001	0.012	-0.058	-0.062	0.961
Cultural distance	-2.995	7.195	-0.430	-0.416	0.749

to use franchising as a strategy of internationalization for entering the foreign markets that are less geographically distant from Spain and are more similar in terms of culture (Baena, 2012). Similar conclusions were drawn in a study conducted in China. It has been found that franchise enterprises are predecided to internationalize their business activities through franchising in countries that are geographically and culturally closer to the country of origin of the franchisor (Zhu et al., 2011).

The results of the t-test of the independent samples show that there is a statistically significant difference in the economic development between franchise SMEs that implement franchising as an internationalization strategy and franchise SMEs that implement other strategies (t=-3.147, p=0.002). When compared to the franchise SMEs that implement franchising as an internationalization strategy (M=6055.63, SD=6584.525), franchise SMEs that implement other internationalization strategies decide to operate in the markets that differ more in terms of economic development from the Republic of Serbia (M=14400.89, SD=15332.874) (Table 5).

The results of the t-test of the independent samples show that there is a statistically significant difference in terms of geographical distance between franchise SMEs that implement franchising as an internationalization strategy and those that implement other strategies (t=-2.911, p=0.006). Therefore, the conclusion is that, when compared to the franchise SMEs that implement other internationalization strategies (M=2178.36, SD=4029.589), franchise SMEs that implement franchising as an internationalization strategy (M=415.46, SD=380.432) decide to operate in geographically closer markets (Table 6).

T-test of the independent samples shows that there is a statistically significant difference in terms of cultural distance between franchise SMEs that implement franchising as an internationalization strategy and franchise SMEs that opt for other internationalization strategies (t=3.536, p=0.001).

When compared to the franchise SMEs that implement other internationalization strategies (M=1.90112, SD=1.369543), franchise SMEs that implement franchising as an internationalization strategy (M=0.66182, SD=0.709023) opt for markets that are more similar to the Republic of Serbia in terms of cultural dimensions (Table 7).

Conclusion

Small and medium-sized enterprises strive to internationalize their business activities, and franchising is considered a suitable internationalization strategy, bearing in mind

Table 5: Statistical significance of the difference in the level of economic development between the countries of origin of the franchisor and the franchisees

	Levene's test for equality of variances		T-test for equality of means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean difference	Std. error difference
Equal variances assumed	21.163	0.000	-2.538	67	0.013	-8345.264	3288.590
Equal variances not assumed			-3.147	64.855	0.002	-8345.264	2651.580

Table 6: Statistical significance in geographical distance between the countries of origin of the franchisor and the franchisees

	Levene's test for equality of variances		T-test for equality of means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean difference	Std. error difference
Equal variances assumed	18.155	0.000	-2.131	67	0.037	-1762.897	827.317
Equal variances not assumed			-2.911	45.459	0.006	-1762.897	605.694

Table 7: Statistical significance in cultural distance between the countries of origin of the franchisor and the franchisees

	Levene's test for equality of variances		T-test for equality of means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean difference	Std. error difference
Equal variances assumed	9.371	0.004	-2.588	35	0.014	-1.239	0.479
Equal variances not assumed			-3.536	27.132	0.001	-1.239	0.350

the limited financial and managerial resources of SMEs. The number of franchises in the world is growing day by day, as an increasing number of enterprises see many advantages that the franchise business concept offers. When opting for a foreign market for conducting the business activities and selecting an internationalization strategy, franchise SMEs take into account a number of internal and external factors. The paper analyzes the impact of external factors that are related to economic development and the geographical and cultural distance between countries of origin of the franchisor and the franchisees on the implementation of franchising as an internationalization strategy. The results of the analysis show that 62.5% of franchise SMEs from the Republic of Serbia operate internationally, while 37.5% operate only in the domestic market. In addition, 40% of franchise SMEs use franchising as an internationalization strategy, while 60% of franchise SMEs opt for other internationalization strategies (export and licensing).

Franchise SMEs from the Republic of Serbia that implement franchising as an internationalization strategy usually decide to enter the markets of former SFRY countries (85% of the analyzed franchise SMEs). The correlation analysis shows that there is a statistically significant strong negative correlation between the level of economic development of the countries of origin of the franchisor and the franchisees and the implementation of franchising as an internationalization strategy. Correlation analysis shows that there is a moderate negative correlation between the geographical distance between the countries of origin of the franchisor and the franchisees and the implementation of franchising as an internationalization strategy, but that it is not statistically significant. The index of cultural distance indicates that, according to the six dimensions of culture, the Republic of Serbia is the most similar to Croatia, Slovenia and Russia, while there are significant differences when compared to France and the Czech Republic. The correlation analysis shows that there is a strong negative correlation between the cultural distance between the countries of origin of the franchisor and the franchisees and the implementation of franchising as an internationalization strategy. The results of the multiple linear regression show that, out of the analyzed external factors, cultural distance contributes the most to the explanation of the number of international franchise units as a dependent variable.

When compared to the franchise SMEs that implement franchising as an internationalization strategy, franchise SMEs that implement other internationalization strategies decide to operate in the markets that differ more from the Republic of Serbia in terms of economic development. In addition to that, franchise SMEs that implement franchising as an internationalization strategy decide to operate in geographically closer markets, as opposed to the franchise SMEs that implement other internationalization strategies. When compared to the franchise SMEs that implement other internationalization strategies, franchise SMEs that implement franchising as an internationalization strategy opt for markets that are more similar to the Republic of Serbia in terms of cultural dimensions.

Limitations and future research

There are a few limitations of this study. First, there is no official register of franchise companies in the Republic of Serbia. Based on the available literature and relevant online sources, the author created a database of domestic franchise companies from the Republic of Serbia, thus contributing to the further creation of an official franchise database at the national level. Insufficient information about the franchise business concept and the opportunities it offers for business expansion in both domestic and global markets is one of the major problems in the Republic of Serbia. Raising awareness about the benefits of franchising would motivate more companies to consider this business concept as their business opportunity. Therefore, greater promotion of franchising as a business concept is necessary. Franchise SMEs from the Republic of Serbia are still insufficiently informed about who they can contact for professional assistance. In order to provide greater institutional support to the existing franchise SMEs and companies that plan to develop their franchise system in the future, it is necessary to strengthen the system of consulting professional assistance and support for franchise companies. Very often franchise companies or companies that want to develop a franchise system are

not sufficiently aware of the complexity of franchising as a business concept. In this regard, it is necessary to organize trainings and educational workshops for the existing and potential franchisors on how to develop and create a strong and stable franchise system. On the other hand, it is also necessary to educate potential franchisees about the franchise business.

Franchisors often face the same or similar problems during the establishment of the franchise system and the selection of franchisees. Therefore, an innovative idea that could help the existing and potential franchisors and users is to launch a website in the form of a social network that would also be a forum for exchanging experiences between franchisors and franchisees. The social network would not have to be limited to the Republic of Serbia alone, but could bring together franchise companies from all over the region. One of the key potentials of this social network would be that it could become a place of virtual meetings between franchisors and potential franchisees. Bearing in mind that the study is focused only on franchise systems from the Republic of Serbia, the recommendation for future research may be to expand the scope of research to other countries from the region in order to compare the results. A recommendation for future research is an analysis of internal factors that can significantly influence the implementation of franchising as an internationalization strategy.

References

1. Aliouche, E.H., & Schlentrich, U.A. (2011). Towards a Strategic Model of Global Franchise Expansion. Journal of Retailing, 87(3): 345-365.
2. Alon, I. & McKee, D. (1999). Towards a macro environmental model of international franchising. *Multinational Business Review, 7*, 76-82.
3. Alon, I. (2006). Market conditions favoring master international franchising. *Multinational Business Review, 14*(2), 67–82.
4. Alon, I., Madanoglu, M., & Shoham, A. (2017). Strategic agility explanations for managing franchising expansion during economic cycles. *Competitiveness Review: An International Business Journal, 27*(2), 113–131.
5. Altinay, L., Brookes, M., Madanoglu, M., & Aktas, G. (2014). Franchisees' trust in and satisfaction with franchise partnerships. *Journal of Business Research, 67*, 722–728.
6. Anderson, E., & Gatignon, H. (1986). Modes of foreign entry: A transaction cost analysis and proposition. *Journal of International Business Studies, 17*(3), 1-26.
7. Baena, V. (2012). Market conditions driving international franchising in emerging markets. *International Journal of Emerging Markets, 7*(1), 49-71.
8. Bradach, J. L. (1997). Using the plural form in the management of restaurant chains. *Administrative Science Quarterly, 42*, 276–303.
9. Buckley, P. J., & Ghauri, P. N. (1999). *The internationalisation of the company*. New York: Cengage Learning EMEA.
10. Burton, F., Cross, A. R., & Rhodes, M. (2000). Foreign market servicing strategies of U.K. franchisors: An empirical enquiry from a transaction cost perspective. *Management International Review, 40*(4), 373-400.
11. Czinkota, M. R., & Ronkainen, I. A. (2001). *International marketing*. USA: Harcourt College Publishers.
12. Dant, R., Grunhagen, M., & Windsperger, J. (2011). Franchising Research Frontiers for the Twenty-First Century. Journal of Retailing, 87(3): 253–268.
13. Đorđević, M. (2005). *Međunarodni marketing*. Kragujevac: Univerzitet u Kragujevcu – Ekonomski fakultet.
14. Elango, B. (2007). Are Franchisors with International Operations Different from Those Who Are Domestic Market Oriented? Journal of Small Business Management, 45(2): 179-193.
15. Eroglu, S. (1992). The internationalising process of franchise system: A conceptual model. *International Marketing Review, 9*(5), 19-30.
16. Fladmoe-Lindquist, K., & Jacque, L. L. (1995). Control modes in international service operations: The propensity to franchise. *Management Science, 41*(7), 1238-1249.
17. Fladmoe-Lindquist, K. (1996). International franchising: Capabilities and development. *Journal of Business Venturing, 11*(5), 419-439.
18. Grace, D., & Weaven, S. (2011). An Empirical Analysis of Franchisee Value-in-Use, Investment Risk and Relational Satisfaction. Journal of Retailing, 87(3): 366-380.
19. Grunhagen, M., & Mittelstaedt, R. (2005). Entrepreneurs or investors: Do multi-unit franchisees have different philosophical orientations?. *Journal of Small Business Management, 43*(3), 207-225.
20. Hoffman, R., Munemo, J., & Watson, S. (2016). International franchise expansion: The role of institutions and transaction costs. *Journal of International Management 22*, 101–114.
21. Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. Thousand Oaks, CA: Sage Publications, Inc.
22. Hofstede, G., & Bond, M. (1988). The Confucius connection: From cultural roots to economic growth. *Organization Dynamics, 16*(4), 4-21.
23. Hollensen, S. (2004). *Global marketing: A decision-oriented approach*. Harlow: Financial Times/Prentice Hall.
24. Hollensen, S. (2007). *Global marketing: A decision-oriented approach*. Harlow: Financial Times/Prentice Hall.
25. Huszagh, S. M., Huszagh, F. W., & Mclntyre, F. (1992). International franchising in the context of competitive strategy and the theory of the firm. *International Marketing Review 9*(5), 5-18.
26. Koch, A. J. (2001). Selecting overseas markets and entry modes: Two decision processes or one?. *Marketing Intelligence & Planning, 19*(1), 65-75.

27. López-Bayón, S., & López-Fernández, B. (2016). Partner empowerment and relationship failure in franchising. *Journal of Small Business Management, 54*(4), 1059–1079.
28. Madanoglu, M., Alon, I., & Shoham, A. (2017). Push and pull factors in international franchising. *International Marketing Review, 34*(1), 29-45.
29. Merrilees, B., & Frazer, L. (2006). Entrepreneurial franchisees have hidden superior marketing systems. *Qualitative Market Research: An International Journal, 9*(1), 73 – 85.
30. Morgan, G. (1997). *Images of organization.* Thousand Oaks, CA: Sage Publications.
31. Nijmeijer, K., Fabbricotti, I. N., & Huijsman, R. (2014). Making franchising work: A framework based on a systematic review. *International Journal of Management Reviews, 16*(1), 62-83.
32. Price, S. (1997). *The franchise paradox: New directions, different strategies*. United Kingdom: Cengage Learning EMEA.
33. Privredna komora Srbije. (2008). *Franšizing – Najčešće postavljana pitanja.* Retrieved from http://www.pks.rs/SADRZAJ/Files/Frans%20brosura.pdf.
34. Quinn, B., & Doherty, A. M. (2000). Power and control in international retail franchising: Evidence from theory and practice. *International Marketing Review, 4*, 354-372.
35. Root, F. (1989). *Foreign market entry strategy.* New York, NY: AMACOM.
36. Rosado-Serrano, A., & Paul, J. (2018). A new conceptual model for international franchising. *International Journal of Hospitality Management, 75*, 179–188.
37. Rothaermel, F. T., Kotha, S., & Steensma, H. K. (2006). International market entry by U.S. internet firms: An empirical analysis of country risk, national culture, and market size. *Journal of Management, 32*(1), 56-82.
38. Scarborough, N. (2012). *Effective small business management.* New York: Prentice Hall.
39. Schoenberger, E. (1991). The corporate interview as a research method in human geography. *The Professional Geographer, 43*(2), 180-189.
40. Shane, S. (1998). Explaining the distribution of franchised and company-owned outlets in franchise systems. *Journal of Management, 24*(6), 717-739.
41. Shane, S. A., & Hoy, F. (1996). Franchising: A gateway to cooperative entrepreneurship. *Journal of Business Venturing, 11*, 325-328.
42. Stanworth, J. (1999). "Customer service" franchising – A trend or a deviant case?. *International Small Business Journal, 17*(3), 74-78.
43. Stefanović, S., & Stanković, M. (2013). Komparativna analiza razvoja franšizinga u Srbiji i svetu. *Marketing, 44*(2), 115-127.
44. Teece, D. (1977). Technology transfer by multinational firms: The resource costs of transferring technological know-how. *Economics Journal, 87*, 242-261.
45. Tes, D. K., & Pan, Y. (1997). How MNCs choose entry modes and form alliances: The China experience. *Journal of International Business Studies, 23*(4), 201-209.
46. The World Bank. (2016). *GDP per capita (current US$).* Retrieved from http://data.worldbank.org/indicator/NY.GDP.PCAP.CD.
47. Walvoord, W. (1980). Export market research. *Global Trade Magazine, May*, 83.
48. Watson, A., & Kirby, D. (2004). Public perceptions of franchising in Britain: Releasing the potential. *Journal of Small Business and Enterprise Development, 11*(1), 75–83.
49. Wu, C. (2015). Antecedents of franchise strategy and performance. *Journal of Business Research, 68*(7), 1581–1588.
50. Zhu, M., June Wang, Z., & Rose Quan, H. (2011). A Study on the Key Factors Influencing International Franchisors' Choice of Entry Modes into China. Frontiers of Business Research in China, 5(1): 3-22.

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