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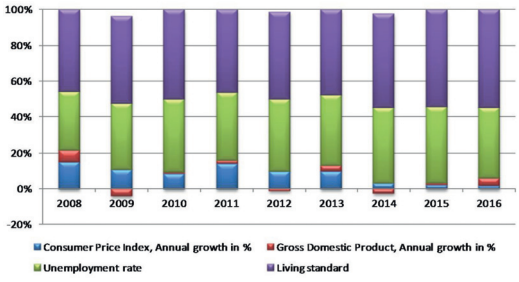

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Sadržaj|Contents

ORIGINALNI NAUČNI RAD / ORIGINAL SCIENTIFIC PAPER

PREGLEDNI NAUČNI RAD / OVERVIEW SCIENTIFIC PAPER

KRATKO SAOPŠTENJE / SHORT REPORT

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ORIGINALNI NAUČNI RAD / ORIGINAL SCIENTIFIC PAPER

MANAGERIAL PLANNING: HOW SCHEDULING INFLUENCES TV ADVERTISING EFFECTIVENESS

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Abstract: *The purpose of this research is to analyse the scheduling factors and their influence on TV advertising effectiveness. We deployed a quantitative approach based on a complete data set of advertisements aired on Czech TV in 2016 and 2017 for constructing a regression model. In contrast to several previous studies, our findings indicate that most analysed variables have only a negligible influence (length of spot, length of break, number of spots, position in break, category, day of the week, week, year, and interaction of week and year) on TV advertising exposure, while only the type of programme, daypart and TV channel show a relevant impact on advertising exposure.*

Keywords: *advertising management, commercial breaks, exposure, marketing communication, media scheduling*

JEL classification: *M37, M20*

INTRODUCTION

Every manager of either a global enterprise or a small family business faces the problem of managerial planning. A manager of any company using advertising tools or a manager of an advertising agency or a particular medium faces the problem of advertising planning and measuring its effectiveness (Kover et al., 1995; Biehal & Sheinin, 1998; West et al., 1999; King et al., 2004). The issue of managerial planning is a complex topic of managerial decision-making (Tapiero, 1977). Managerial decision-making in the sphere of mass media communication has various specifics that make it complicated. One such specific is the fact that the effectiveness of mass media communication and its real impact is difficult to

measure (Rubinson, 2009; Kelley et al., 2015; Percy & Elliott, 2016). Planning and decision-making in advertising management are based both on the internal processes and strengths of the company and the overviews and analyses of the competition's advertising campaigns, i.e. the prediction of the reaction of competitors (Batra et al., 2009; Jacobi et al., 2015). Advertising management requires an understanding of the entire marketing process (Arens & Bovée, 1994; Jugenheimer et al., 2014).

Advertising management comes into contact with the media, media planning or scheduling (Long & Wall, 2014; Jugenheimer et al., 2014) and also includes the concept of media planning, as advertising effectiveness depends on media space selection, planning of airing ads, advertising scheduling and timing (Arens and Bovee, 1994; Batra et al., 2009). Advertising management focuses primarily on deciding how to use particular media to effectively deliver the advertising message to recipients (Katz, 2017). The effectiveness of advertising can be derived primarily from an effective media plan (Arens & Bovee, 1994; Moriarty et al., 2014), as a medium is a tool through which something is achieved, expressed and communicated (Katz, 2017).

The topic of advertising effectiveness is often discussed in the academic community (Barry & Howard, 1990; Mela et al., 1997; Kieschnick et al., 2001; Tellis, 2003; Wilbur, 2008; Gijsenberg et al., 2009; Rubinson, 2009; Kelley et al., 2015; Percy & Elliott, 2016; Bellman et al., 2017). The problem of advertising effectiveness has been studied ever since its discovery and there is no single comprehensive solution because advertising effectiveness has many different definitions. Different subjects evaluate "effectiveness" differently (Reid & King, 2003). The differences are not only in the definitions of ad effectiveness but also in ways of measuring and controlling it. For example, the media defines effectiveness as an exposure of a target group; agencies consider effectiveness as the ability to position in the consumer's mind, while according to advertisers, effective communication should lead to the purchase decision. As a result, the subjects on the advertising market follow different aims and use different means to fulfil them.

Different concepts of the meaning of advertising effectiveness arise primarily from the nature of the media and advertising market, from the media space used to air advertising, and from the objectives of advertising management (Percy & Elliott, 2016; Katz, 2017). As this study focuses on the issue of media planning, advertising effectiveness is understood and measured as exposure for the purpose of this study. Exposure is the only meaning of advertising effectiveness that solely

depends on advertising scheduling, and contrary to other meanings (attitude, recall, purchase etc.) is not primarily influenced by advertising content and creativity (Kover et al., 1995).

Advertising exposure is the number of viewers exposed to an advertising message, i.e. the share of the population exposed to a message. Advertising space pricing is based on GRP (gross rating points), calculated as the exposure multiplied by the frequency (Katz, 2017; Kelley et al., 2015; Schultz et al., 2016). Therefore, the media are interested in maximizing the exposure to augment the price of the advertising space they sell (Lloyd & Clancy, 1991; Murray & Jenkins, 1992; Shachar & Anand, 1998). Selling media space for advertising purposes is for many Czech TV channels a primary and vital financial resource (Anderson & Gabszewicz, 2006; Gunina & Kincl, 2017). Nowadays, the number of TV viewers is declining and it is harder to address a mass audience (Danaher, 2017); therefore, the topic of advertising exposure has become a more topical issue than ever before.

Several studies have analysed the effect of the scheduling patterns of advertisements on exposure. TV channels with a larger audience can offer a greater exposure of the advertising space. Yuspeh (1977), Schultz (1979), Aylesworth and MacKenzie (1998), Furnham et al. (1998), DePelsmacker et al. (2002) suggest the media context/environment (particularly the type of TV programme) is the prominent factor influencing advertising effectiveness. Galpin and Gullen (2000) and Katz (2017) echoed the time of airing (or the daypart) as the prominent factor. Advertisements aired in the afternoon have the lowest recall whereas advertisements aired in the evening have the highest recall. The factors mentioned can radically influence viewers' attitudes and response to an advertisement and significantly affect whether the viewers remain in front of the screen to be reached by an advertisement.

However, others have identified other significant factors as the length of a spot, the length of a break, the number of spots in a break and the spot position in a break (Billet, 1993; Danaher, 1995). Billet (1993) analysed the influence of the length of the spot, the number of spots in a break and the position in a break, and found that the first spot in a break has a higher rating. Danaher (1995) conducted a comprehensive analysis of various factors and found that: a) the first spot in a break has a high recall and the lowest rating of all the ads in the break and the last spot in a break has a high recall and high rating; b) the number of ads in a break, the length of a break and the length of a spot influence viewing ra-

ting although not considerably; c) the type of programme has a strong influence on viewing rating; d) A break with shorter spots has a higher rating; e) too long and too short breaks have the lowest rating, f) the decrease in viewing ratings during a break cannot be fully explained only by these indicators. Contrary to this, Galpin and Gullen (2000) found that a) the middle spot in a break has a higher rating than the last and the first one (the first one has the lowest rating); b) spots in a shorter break have a higher recall than spots in a longer break; c) the less spots are in a break, the more effective are the advertisements in a break.

Our study aims to contribute to this debate and examine the influence of selected scheduling factors of advertisements on its exposure. The complete monitoring data sample used includes all advertisements aired on television channels on the Czech TV medium in 2016 and 2017. The dataset contained 11.269 million advertising spots from selected years and covered various timing and placement information for each advertisement (see Table 1 for the list of available variables).

Hence, we formulated the following research questions:
- RQ1: Which scheduling factors influence advertising exposure?
- RQ2: What is the impact of the selected factors on advertising exposure?

To increase the effectiveness of advertising, it is important to continue researching this issue (Arens & Bovee, 1994; Batra et al., 2009; Jacobi et al., 2015). This research on the TV advertising exposure can contribute to the development of the theory of advertising effectiveness and the theory of the advertising scheduling model. The development of theory in this field can be beneficial for organisations, the management of companies using advertising tools, for media, for advertising and media agencies. Acquiring new knowledge of this topic can also be beneficial for a state, as advertising can affect the economy of a state: advertising can influence aggregate demand and GDP, as well as employment and two separate markets: the media market and the advertising market (Norris, 1984; Nelson, 2005; Bagwell, 2007; Romat, 2008; Romanov, 2010; Plumer, 2012). It is a fact worth to mention that investing in mass media communication is a financially demanding cost item of business, so research on the effectiveness of advertising and the optimisation of advertising airing (or media space usage) is essential for adequate spending and return on investment. Thus, advertising managerial planning can greatly influence the strategic management of a business and cannot be regarded merely as a support mechanism. This research has the potential to make a theoretical contribution while also considering the practical implications.

METHODS

The research uses a quantitative approach based on the complete monitoring data sample, which includes all advertisements aired on television channels on the Czech TV medium in 2016 and 2017. Data is provided by the media research agency Nielsen Admosphere and concerns 5.661 million advertising spots in 2016 and 5.608 million advertising spots in 2017. Spots missing at least one value of the analysed variables were removed from the dataset. The final research sample contains a total of 11.212 million spots. Table 1 shows the influences of all independent variables that were analysed. In 2016, there were 44 channels on the Czech TV market belonging to seven TV platforms (Gunina & Kincl, 2017). As a product category, we used NACE third level categories to classify low or high involvement products (Rossiter et al., 1991) and immediate or long-term consumption products. The set of analysed variables resulting from the literature review is also caused by the disposability of the provided dataset.

Table 1. Examined input variables (predictors)

Group of channels (TV outlet)	TV channel
Programme type (before break)	Programme type (after break)
Product category	Length of break
Number of spots	Position in break
Length of spot	Year of airing
Week of airing	Month of airing
Time of airing	Day of airing

Exposure of an individual ad spot is entered into the model as a dependent variable. Exposure is represented as a percentage of the population that was exposed: the condition is that the person viewed the whole spot (if a spot is three minutes long or shorter) or at least viewed three minutes if a spot is longer than three minutes. Exposure data is collected using a panel (TV meter) where one respondent (a household) represents a proportional part of a particular consumer segment. The TV meter does not measure only the time that the TV is on but works on a mechanism where a member of the household must log in and stay logged in throughout the whole period of exposure to the TV medium and must log out when leaving the room (Danaher, 1995). This enables to avoid a measuring error when the TV is on but the viewer is out of the room. Nevertheless, this research has some limitations caused by the data set. The sample only includes data for the traditional TV medium – postponed viewing and online TV are not included in this research. However, the analysis of these areas can provide important re-

sults as some consumer segments tend to prefer online TV or other video media (Fudurić et al., 2018) rather than media from a traditional TV receiver.

The data needed to be transformed before the analysis and the time of advertisement broadcasting (hour-minute-second) was transformed to daypart. Katz (2017) defines nine dayparts for the American market. As the Czech media market differs from the American one, we defined the dayparts according to media habits in the Czech Republic: Late night (11 p.m. – 1 a.m.), Dead time (1 – 6 a.m.), Early morning (6 – 9 a.m.), Daytime (9 a.m. – 12 p.m.), Early fringe (12 – 5 p.m.), Evening (5 – 7 p.m.) and Primetime (7 – 11 p.m.).

The regression analysis with qualitative predictors was used to identify the set of variables influencing advertising effectiveness. All available factors that could potentially influence advertising exposure were analysed in order to avoid multicollinearity that could threaten the accuracy of the parameter estimation in regression methods. First, we removed the factors that were strongly dependent by their definition. The remaining set of factors was analysed using variance inflation factors (Weisberg & Fox, 2011) adjusted by the degrees of freedom in order to correctly proceed with the qualitative predictors.

After the necessary reductions, we conducted a regression analysis with both qualitative and quantitative predictors. To capture the differences in weeks of both years we included the interaction between weekly and yearly predictors. The amount of data in both years describing the whole TV advertising market expectably leads to the significance of all predictors; therefore, it is not reasonable to employ the usual t-test and F-test of significance. Instead, we measured the "impact" of all factors using effect size estimation (Fritz et al., 2012) for an ANOVA table computed for the predictors of the regression model. The effect size describes the proportion of variability explained by a particular variable using a measure called partial eta squared , which is defined using the sum of squares from the ANOVA table of the resulting regression model. The resulting sizes of the effect are evaluated according to the scales of Sawilowsky (2009) and Cohen (1988).

FINDINGS

Two variables were removed from the model before testing because these variables appeared to be redundant as repeated information provided by other variables. Hence, these variables must have caused multicollinearity. The group of channels variable is an aggregated variant of the TV channel variable and the

month of airing is strongly dependent on more detailed frequencies in the variable week (order number in a year) of airing. After this reduction, we concluded using generalized variance inflation factors that all remaining factors appear to be sufficiently independent of other predictors and do not cause multicollinearity. As expected, all regression parameters appeared to be significantly measured by p-values in the F-test of significance. The high levels of significance were caused by the rather large extent of data that exhaustively depicts the whole TV advertising market in the analysed years and hence the testing of the predictors' significance is useless. The stepwise model selection procedure showed that none of the eleven variables can be excluded from the model without significant loss of accuracy (tested using the sub model F-test). The results show the models containing twelve factors and one interaction between two factors (RQ1).

Table 2. Characterisation of factors and effect sizes in ANOVA table for 2016 and 2017 data

	Df	Sum of squares	F-value	P-value	Effect size [in %]
TV channel	46	4779554	238550.3	$< 2.2\times10^{-16}$	49.466
Programme type (before break)	58	563818	22318.3	$< 2.2\times10^{-16}$	10.352
Programme type (after break)	58	162410	6428.9	$< 2.2\times10^{-16}$	3.230
Length of spot	1	13703	31459.4	$< 2.2\times10^{-16}$	0.280
Length of break	1	55662	127794.5	$< 2.2\times10^{-16}$	1.127
Number of spots	1	440	1011.3	9.9×10^{-06}	0.009
Position in break	1	46	106.6	2.6×10^{-14}	0.001
Category	21	862	94.2	$< 2.2\times10^{-16}$	0.018
Day of the week	6	3398	1300.3	$< 2.2\times10^{-16}$	0.070
Week	51	22835	1028.0	$< 2.2\times10^{-16}$	0.466
Year	1	59	135.6	$< 2.2\times10^{-16}$	0.001
Daypart	7	370388	121481.2	$< 2.2\times10^{-16}$	7.051
Week: Year (interaction)	51	1554	70.0	$< 2.2\times10^{-16}$	0.032
residuals	11210141	4882708			

Table 2 shows the effect size of the remaining variables, which was used to measure the influence of the analysed scheduling factors on advertising exposure (RQ2). The resulting effect sizes are very small, i.e. of the order of 0.01 (Sawilowsky, 2009), small with a value close to 0.2 or medium with a value of around 0.5 (Cohen, 1988). The resulting effect size achieved the level of medium only in

case of the TV channel and the size close to small only in case of the variable programme type (before a break). All other effect sizes (daypart, length of spot, length of break, number of spots, and position in the break) were very small (Table 2). It is obvious that the variable TV channel strongly influences the exposure of advertisements and has the strongest effect. This, together with the overall values of the adjusted R-squared, (equal to 0.5503) implies that all the factors measured in the analysed data set only partially describe the exposure of the advertisements since the remaining variability is unexplained by the models.

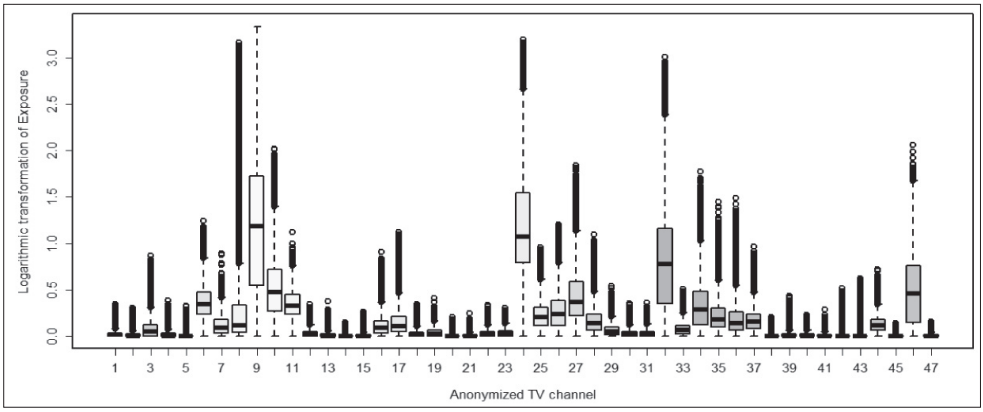

Figure 1. The influence of a TV channel on TV advertising exposure

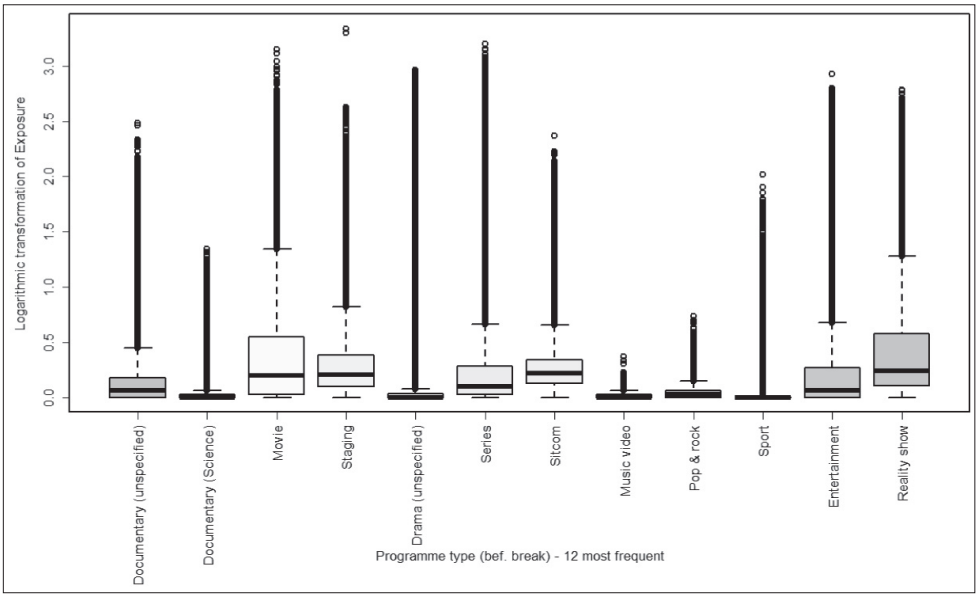

Figure 2. The influence of the programme type before a break on TV advertising exposure

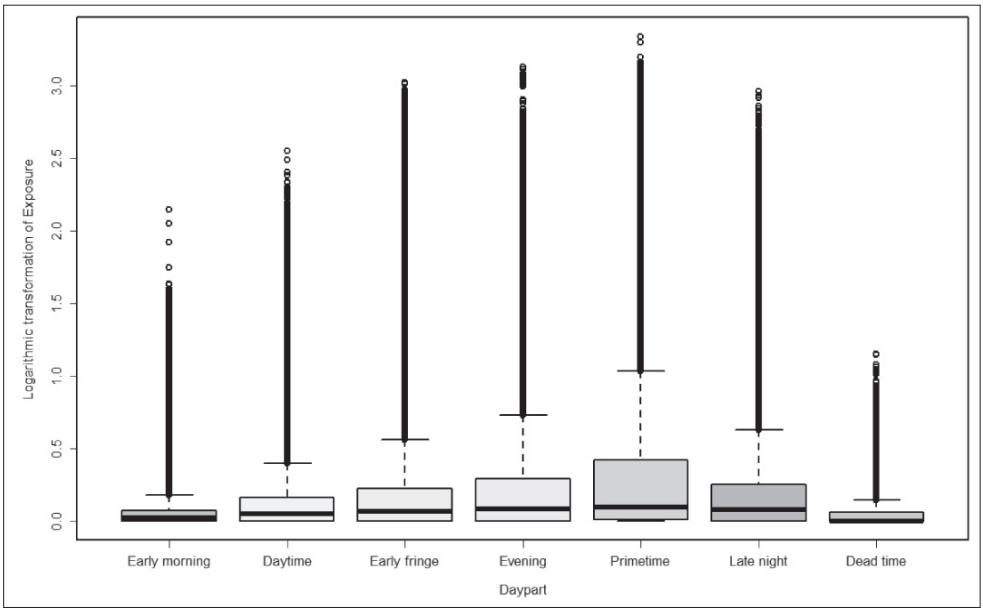

Figure 3. The influence of daypart on TV advertising exposure

Figure 1, Figure 2 and Figure 3 show the impact of the variables that have the relevant effect size in relation to TV advertising exposure. The course of Figure 3 can be expected, as Dead time does not include the high value of advertising exposure, contrary to Early fringe, Evening, Primetime and Late night. Figure 1 shows a substantial spread in exposure values depending on the TV channel. Similar to this, Figure 2 shows large changes in exposure regarding programme type. From the managerial point of view, it is an important finding that channel and programme selection is an essential pillar of advertising effectiveness.

DISCUSSION AND CONCLUSION

The results indicate that some of the pricing mechanisms in media space planning and selling might have some kind of rationale. Even though the analysis revealed a statistically significant difference in exposure for all predictors (TV channel, programme type before a break, programme type after a break, length of spot, length of break, number of spots, position in break, category, day of the week, week, year, daypart and interaction of week and year), the real size of the effect – as indicated by partial eta squared – was almost none to very small (see the effect sizes in Table 2). The effect size was medium only in the case of the TV channel and small for the programme type and daypart. However, such results were expected. On a TV channel with a large audience, the exposure of the

advertisements is also expected to be large. Similarly, when a large audience is watching a TV programme, most do not switch to another TV channel when the programme is interrupted by a commercial break. This is in line with previous studies, which echoed the TV channel as the most prominent factor influencing the exposure and concluding that the programme type (in which the ad break is placed) is also important (Katz, 2017; Danaher, 1995).

Contrary to Billet (1993) or Galpin and Gullen (2000), we do not support the conclusion that the advertising exposure differs according to its position in the break or the number of spots in a break. Therefore, asking a premium price for example for the position of the spot in the commercial break or for spots in shorter breaks has little support in terms of real data. However, such a conclusion would require a more in-depth analysis, as our model only partially explains the variance of exposure. The R-squared value (0.5503) implies that there are other factors (not measured or immeasurable factors) that could explain the changes in advertising exposure and that are not included in our data. Moreover, the exposure measure in the dataset reflects the viewing audience as a whole and does not provide detailed information about various segments or groups of media consumers. Further subsequent research can explore not only the relationship between exposure and other variables but also the relationship between all variables in a model and regard the segmentation of the audience according to the consumer profile.

We studied the advertising effectiveness on the Czech TV market; however, the findings can be beneficial for the whole Central and Eastern Europe TV market, as the model of media scheduling and media space selling does not differ much in the states of the CEE region. As the advertising market of only one particular state was analysed, the results of this study can only be generalised with caution.

From a practitioner's and managerial point of view, our study contributes to the debate on the importance of detailed advertising planning and scheduling. Instead of wasting money or spending time negotiating a better position for their ads, the marketers should focus on other aspects of their advertisements (i.e. if the message is clear and understandable to its audience, whether it imposes attention/awareness, comprehension, conviction, or even desire and action).

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ORIGINALNI NAUČNI RAD / ORIGINAL SCIENTIFIC PAPER

TODA-YAMAMOTO CAUSALITY BETWEEN E7 COUNTRIES STOCK MARKETS

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Abstract: *In this study, the causal relationship between the fastest growing emerging countries (Emerging 7) stock markets is discussed. In the study, Turkey, India, Indonesia, China, Mexico, Brazil and the Russian stock market indexes is taken into causal relationship with each other. As analysis method Toda Yamamoto approach to Granger causality test was used. As a result of the study, it was concluded that the regional interaction between stock markets is more than intercontinental interaction.*

Keywords: *Stock markets, Causality, Toda Yamamoto Analysis, Emerging Countries*

JEL Classification: F21, F35, N20

INTRODUCTION

In recent years, international capital movements have increased. The relations between international capital markets are gaining more importance together with the world, which continues to unite rapidly. The process of globalization of international stock exchanges has been studied in depth by economists and other researchers, and it is concluded that stock markets are highly globalized in these researches (Menezes, 2013).

In this context, the integration of international capital markets in the financial literature continues to be widely explored and discussed. The integration of international capital markets has implications for both policy makers and investors. An examination of the integration of capital markets is important because it allows for effective portfolio diversification for international market investors. The basis of effective portfolio theory is based on diversification and dissemination and reduction of risk. At this point, in addition to diversity among economic sectors, geographic or regional diversifications are important for an effective portfolio.

Mutual relations between international exchanges also have an impact on asset allocation and risk management. In particular, the recent global financial crisis and its contagious impacts have revealed that joint movements and causal relati-

ons between international markets need to be further studied.

With developing technological infrastructure and computer systems, it is much easier to direct capital to international transfers and investments. Correlational, retrospective and delayed relationships are therefore also important for investors who prefer to gain earnings through portfolio diversification in international markets. Although it is important whether stock markets act together or at what level they are integrated into each other in different countries and the causality between the indices is important for policy makers and future predictors of understanding the dynamics of index returns.

However, the integration process of financial markets is difficult to measure as it has a dynamic structure. In the literature, various empirical methods are used to reveal such relations. In some of these studies, researchers conducted regressions of different sub-dimensions in order to obtain information on long-term changes in the dynamics of integration and causality of stock exchanges (Tudor, 2011). In this study, the world's fastest-growing emerging markets (E7) of Turkey, India, Indonesia, China, Mexico, Brazil and Russia causality of stock index was investigated. The Granger causality test was carried out with Toda Yamamoto procedure.

LITERATURE

With the rapid liberalization of financial markets in the world, stock market integration and correlations between countries are also realized rapidly. Since these developments are directly related to the finance field, the number of studies conducted in this direction also increases. In the literature, different sampling and analysis techniques are used to reveal the inter-country financial market relations.

Cheung & Mak (1992) examined the causal relationship between the two developed markets, US and Japan, using the weekly yields of the emerging Asia-Pacific markets for the period from 1977 to 1988 in their study. As a result of the study, it was determined that the US market affected the developing Asia-Pacific countries, with the exception of the relatively more covered markets such as Korea, Taiwan and Thailand. And also they found that the Japanese market is less important for Asia-Pasific stock markets.

Chowdhury (1994) investigated the relationship between the stock exchanges of four economies in Asia. The results showed that Hong Kong and Singapore stock markets had an important link between Japan and the United States.

Sharkasi, Ruskin and Crane (2005) examined the relationship between stock prices in Ireland, England, Portugal, USA, Brazil, Japan and Hong Kong stock exchanges. As a result of the study, they found evidence of the co-movements of the stock markets in Europe. There is also a co-movement between the US and Brazilian markets and the Japanese and Hong Kong markets. Finally, within the circle of influence, it was concluded that European markets influenced American continent markets and then American stock markets influenced Asian stock markets.

Beine, Capelle-Blancard & Raymond (2008) investigated the linear and nonlinear Granger causality between the French, German, Japanese, UK and US daily stock index yields from 1973 to 2003. They found two-way nonlinear causality as a result of the study, but stated that most of them could be explained by heteroskedasticity and structural fractures.

Gözbaşı (2010) examined the interaction between Borsa İstanbul and the stock markets of seven developing countries. The data range is the weekly data for the period December 1995-December 2008. Cointegration and causality analyzes were performed. The results show that there is a long-term relationship between the BIST and Brazil, India and Egyptian stock exchanges, and the interaction between the BIST and the Mexican and Hungarian stock exchanges in the short term.

Menezes (2013) examined the globalization process of stock exchanges in G7 countries with cointegration and Granger causality tests. The data covers the 36-year period starting from 1973. According to the results of the study, significant causal effects emerged. It has reached the evidence that the exchanges are closely related in the long term. He also stated that the US stock exchanges in general have an impact on the stock markets of other countries.

Benli (2014) has examined the long-term relationship between Emerging Countries and Turkey stock market. Long-term relationship was analyzed by Johansen cointegration test for December 30, 1994 to September 30, 2013 time period. According to the results obtained; Colombia and Turkey and Turkey and Mexican have a significant long-term relationship but there is no significant relationship between Turkey and other emerging countries.

Ellul (2015) examined the time-dependent correlation between the Malta Stock Exchange (MSE) index and major international stock markets. He used a MGARCH-DCC approach to measure the degree of MSE movement with other stock markets. The daily returns of six stock indexes were calculated and used to calculate the dynamic

conditional correlations (DCCs) between markets. The results indicated that the local stock market was not driven by the same forces shaping foreign stock markets.

Akel (2015) conducted Granger causality test and Johansen cointegration analysis of Fragile Five (Brazil, Indonesia, South Africa, India and Turkey) countries using the stock market index in November 2000 and December 2013 with the weekly closing data. As a result, the existence of a short and long-term cointegration and causality relationship between the capital markets of these five countries was determined.

METHOD

The data on the variables used in the study were obtained from the websites of the stock market indices and from the Bloomberg and Yahoo Finance databases. The natural logarithmic values of the variables were used in the study. Toda Yamamoto causality analysis was used as the analysis method.

Toda-Yamamoto Approach Granger Causality Test

Conventional Granger causality tests in unrestricted VAR are based on the assumption that basic variables are in stationary or integrated at zero order. If the time series is not stationary, the stability condition of VAR is violated. In case of non-stationary time series, cointegration should be investigated and, if available, should be continued with vector error correction model (VECM) instead of unrestricted VAR. If the series is not integrated in the I(1) order or is integrated in different orders, the long-term relationship test cannot be performed. On the other hand, the use of unit root and cointegration may cause loss of power in series (Ghosh & Kanjilal, n.d.).

In addition, the use of difference values may cause loss of information. Toda and Yamamoto (1995) developed an approach to eliminate the problems observed in the traditional Granger causality test. They used a modified Wald test to limit the parameters of the VAR system's lag length k parameter to the parameters of VAR (k). In the Toda Yamamoto approach, the maximum integration level (dmax) of the variables is determined by the unit root test and then the optimum delay length (k) for the VAR model is increased by (dmax). Finally, Granger causality test is applied to VAR (k + dmax) model.

The TY approach does not cause the problem of information loss that we see in the difference process as it only requires VAR to be at the level values. Therefore,

the TY approach is a long-term test. The Toda Yamamoto Approach Granger Causality test includes the estimation of the following models.

$$X_t = \alpha_\circ + \sum_{i=1}^{k+d\max} \alpha_2 X_{t-i} + \sum_{i=1}^{k+d\max} \alpha_3 Y_{t-i} + \eta_2$$

$$Y_t = \beta_\circ + \sum_{i=1}^{k+d\max} \beta_2 Y_{t-i} + \sum_{i=1}^{k+d\max} \beta_3 X_{t-i} + \eta_2$$

In equations, X_t and Y_t represent the variables examined. In models, each variable is regressed on each other with a number of delays from 1 to $k + d$max. η_1 and η_2 expresses error terms in equations. k shows the maximum number of delays and d the degree of integration of the variables.

Unit Root Test

The first step in time series analysis is to determine the degree of integration of each variable in the analysis. Augmented Dickey-Fuller (ADF) test is a commonly used test for this purpose. As mentioned above, it is not important whether the variables contain a unit root in the Toda-Yamamoto causality test. However, the unit root test is used to determine the maximum stationary degree (dmax). For a time series, the ADF test statistic is usually derived from the calculation of the following equation:

$$\Delta Y_t = \mu + \gamma Y_{t-1} + \sum_{j=1}^{p} \alpha_j \Delta Y_{t-j} + \beta t + \omega_t$$

When μ is the drift term in the equation, t represents the time trend, and p is the maximum delay length. The equation is used to estimate whether $y = 0$. The ADF test statistic is calculated by dividing y 's estimate by the standard error. The cumulative distribution of ADF statistics is provided by Fuller (1976, 2009). If the calculated ADF statistic is less than the critical value in the Fuller table, Y 'is said to be stationary or zero integral (Bahmani-Oskooee, 1993). The unit root hypotheses were determined as shown below.

Null Hypotheses: H_0*:=0* (series contains a unit root)
Alternative Hypotheses: H_1*:≠0* (series is stationary)

FINDINGS

Table 1 shows the ADF test results. According to the table the ADF test shows that the series contain unit roots and the first differences are stationary. All of the variables contain unit root I(1). Therefore, the maximum degree of integration for VAR (k + dmax) model is determined as dmax = 1.

Table 1: ADF Unit Root Test Results

SERIE	Period	Model	ADF test statistics at level	ADF test statistics at first difference	Integration order
BSE100 (India)	1990M1-2018M9	Intercept	1.235449	-9.812710 *	I(1)
BMV (Mexico)	1990M1-2018M9	Intercept	0.482980	-4.949963 *	I(1)
JSE (Indonesia)	1990M5-2018M9	Intercept	0.670528	-8962138 *	I(1)
SHCOMP (China)	1991M1-2018M9	Intercept	-1.860207	-6.862180 *	I(1)
BOVESPA (Brazil)	1993M4-2018M9	Intercept	-0.789079	-15.36353 *	I(1)
MOEX (Russia)	1997M10-2018M9	Intercept	-0.680382	-13.96712 *	I(1)
BIST100 (Turkey)	1990M1-2018M9	Intercept	0.327926	-6.492934 *	I(1)

Note: The maximum lag length in the ADF test is automatically determined by the Eviews program according to the Akaike Information Criteria.

***** The hypothesis of **H_0: Series contains a unit root** is rejected at the 5% significance level.

The optimum delay length for the VAR (k + dmax) model was determined according to LR (sequential modified LR test statistic), FPE (final prediction error), AIC (Akaike information criterion), SC (Schwarz information criterion) and HQ (Hannan- Quinn information criterion) criteria. When the information criteria used to determine the delay lengths indicate different lag lengths, the method applied in general is to take into consideration the LR result (Akkaş & Sayılgan, 2015). The lag lengths in the study were determined by considering the FPE and ACI criteria. The LR criterion was taken into account when different criteria indicated different lag lengths. Table 2 shows the results of the TY causality analysis.

Table 2: TY Causality Results

Series	Casuality Direction	Series	df	Chi-Square	Prob.*
India	←	Turkey	2	7,444258	0,0242
Mexico	NONE	Turkey	1	0,694682 1,276894	0.4046 0,2585
Indonesia	←	Turkey	2	6.574477	0.0374
China	←	Turkey	2	6.543319	0.0379
Brazil	NONE	Turkey	2	0.379328 3.121881	0.8272 0.2099
Russia	→	Turkey	2	6.557483	0.0377
China	←	India	2	16,34109	0,0003

China	→	Indonesia	3	13,16410	0,0043
China	NONE	Mexico	1	0,438429 0,675726	0,5079 0,4111
India	←	Indonesia	3	29,89145	0,0000
India	← →	Mexico	3	12,61141 8,985283	0,0056** 0,0295***
Indonesia	←	Mexico	3	11,75191	0,0083
Brazil	← →	China	5	18,23497 13,24175	0,0027** 0,0212***
Brazil	→	India	2	6,625595	0,0364
Brazil	NONE	Indonesia	3	0,470822 5,138405	0,9253 0,1620
Brazil	← →	Mexico	7	18,66525 14,63184	0,0093** 0,0410***
Brazil	→	Russia	7	14,38554	0,0447
Russia	→	Mexico	7	15,21057	0,0334
Russia	→	Indonesia	2	11,07670	0,0039
Russia	← →	India	11	19,73834 23,76617	0,0491** 0,0138***
Russia	←	China	8	24,72340	0,0017

* 5% significance level. ** Dependent India, Brazil and Russia, *** Dependent Mexico, China and India

According to the Toda-Yamamoto causality test, the H_0 hypothesis that there is no causality from the BIST100 index to the Mexican (BMV) and Brazil (BOVESPA) indices is not rejected at 5% significance level. There is no causal relationship between these indices.

The H_0 hypothesis that there is no causality from the BIST100 index to the indices of India (BSE100), Indonesia (JSE) and China (SHCOMP) is rejected at 5% significance level. There is a one-way causality among these indices. On the other hand, the hypothesis H_0 which states that there is no causality from Russia (MOEX) index to BIST100 index was rejected at 5% significance level. Therefore, Turkey index affects the indexes of Indonesia and China but is affected by the Russian index.

When the relations between the other E7 countries are examined, it is seen that the Chinese index is a reason for the indices of Indonesia and Russia. The Indian index is a cause of the Chinese index. Thus, the Chinese index is influenced by the Indian index, which affects the indices of Indonesia and Russia.

India is influenced by the change in stock markets in Indonesia and Brazil. The change in the Indonesian stock market is also affected by Russia and Mexico. The

Russian stock exchange also affects the Mexican stock market. In the case of bilateral relations, it is seen that there is such a relationship between India-Mexico, Brazil-China, Brazil-Mexico and Russia-India.

Figure 1 shows the schematic representation of these relations. Rays show one-way relationships, while others show bidirectional relationships. The point to be considered here is that the number of periods studied in the causality relations is different for some countries. For example, while China is a cause of Turkey index and it is seen that Russia is a cause of China and Turkey is a cause of Russia.

However, the number of observations taken into consideration in the relationship between BIST100 and SHCOMP index is 333, while the number of observations in the relationship between MOEX and BIST 100 and SHCOMP indices is 253. This situation affects the results of the analysis. Therefore, BIST100 and SHCOMP index data were analyzed again for 253 periods and no causal relationship was found between these two indices (prob. 0, 0628). The same situation is also observed among other country indices. Hence, Figure 1 presents the results of all analyzes as a result of the aggregate.

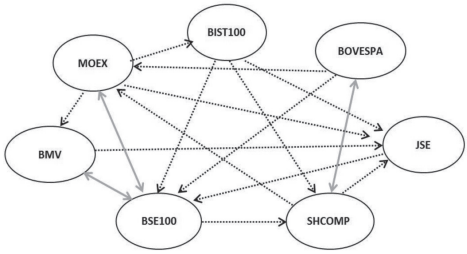

Figure 1: The direction of causality relations between E7 countries stock indices

When we look at the relations between India, Mexico, Turkey, it is observed that BIST100 affect the indices of BSE100. There is bidirectional causality between BSE100 and BMV indices. There is no problem in terms of these relations.

Likewise, the analysis made by the Chinese data, India, Mexico, Indonesia, Turkey has taken place. According to the figure Turkey and India affects China index. The Chinese index affects the Indonesian index. Considering Russia index, Turkey, Indonesia and Mexico are affected by Russian index. At the same time, we see that the Russian index is influenced by the Brazilian and Chinese indices and is in a two-way relationship with the Indian index.

CONCLUSION

As a result of the study, useful information was obtained for investors who wanted to perform arbitrage transactions in international stock markets. Causal relationships between the stock markets of the Far East countries which are listed in E7 and Turkey have been identified. There is also a causal relationship with Russia. This result can indicate that regional interaction between other stock markets and Turkey is more obvious according to the intercontinental interaction. On the other hand, when the relations between the stock exchanges of the other countries are examined, it is seen that the only stock exchange influenced by the Indonesian (JSE) stock exchange is the Indian stock exchange (BSE100). Furthermore the only stock exchange influenced by the Indian stock exchange is the Chinese stock exchange (SHCOMP). The Mexican stock exchange (BMV) is influenced by Russia (MOEX) while influencing Indonesia. Brazil (BOVESPA) is in mutual causality relationship with China stock exchange while affecting India and Russia. The Chinese stock exchange also affects Russia and Indonesia. No causal relationship was found between Brazil-Indonesia and China-Mexico.

According to the findings of this study, as the distance between geographical regions increases, it is observed that the causal relations weaken. At this point, the causality relationship between India and Indonesia stands out as the strongest relationship. As a result, investors who want to obtain arbitrage opportunities from international stock markets should look for intercontinental transactions and diversifying their portfolio. The results of this study have similar and different aspects in terms of the direction of relations with the results of the studies conducted by Gözbaşı (2010), Benli (2014), Dasgupta (2014) and Akel (2015). It also has a high level of similarity with the findings of the study by Jegadeeshwaran and Sangeetha (2018). The reason of the difference may be the effects of the time series covered by the series used and the index types selected for the analysis, as well as the differences of analysis methods. In future studies, testing of the findings of this study with different samples and analysis methods will make more consistent decisions for decision makers.

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ORIGINALNI NAUČNI RAD / ORIGINAL SCIENTIFIC PAPER

DIMENZIJE USLUŽNE PONUDE KAO PRETPOSTAVKA GRAĐENJA DUGOROČNIH ODNOSA SA KUPCIMA TELEKOMUNIKACIJSKIH USLUGA

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Sažetak: *Svrha rada je izražena u potrebi da se istraži značaj pojedinih dimenzija uslužne ponude za kupce i njihov uticaj na spremnost za građenje dugoročnih odnosa sa kompanijom BH Telecom Zenica. Predmet istraživanja su dimenzije uslužne ponude i njihov uticaj na mogućnost građenja dugoročnih odnosa i saradnje između pružaoca usluga i kupaca odnosno sklonosti kupaca da se "vežu" za telekom operatera. Cilj istraživanja definisan je potrebom da se utvrdi koje su poddimenzije uslužne ponude najznačajnija pretpostavka građenja dugoročnih odnosa sa kupcima, a polazeći od uvjerenja da će međusobna saradnja kreirati i osigurati vrijednosti za učesnike u uslužnom procesu. Provedeno istraživanje produbljuje spoznaje o uticaju poddimenzija uslužne ponude na spremnost kupaca za građenje odnosa što se smatra ključnom pretpostavkom za lojalnost kupaca prema kompaniji. Na osnovu rezultata istraživanja može se zaključiti da tri poddimenzije uslužne ponude imaju direktan i pozitivan uticaj na spremnost kupaca za građenje odnosa sa kompanijom, a to su: materijalizacije ponude slijede marka i imidž te raspoloživost usluga kompanije BH Telekom Zenica, dok je najmanji uticaj kvaliteta usluga i procesa pružanja usluga, što upućuje na zaključak da kupac unaprijed percipira zadovoljavajući nivo kvaliteta i nivo pružene usluge.*

Ključne riječi: *mjerenje, uslužna ponuda, AMOS istraživanje*

JEL: *M53, C4, C42*

UVOD

U savremenim tržišnim uslovima značajna pažnja se posvećuje građenju međusobnih odnosa između pružaoca i primaoca usluga. Koncept građenja dugoročnih odnosa sa kupcem, odnosno sa korisnikom usluga, sve više dobija na značaju u uslovima kad se kompanije bore za održavanje tržišnih pozicija i osvajanje konkurentskih prednosti (Egan, J. 2004). Nalazeći opravdanje u rastućim troškovima osvajanja novih kupaca i preotimanja od konkurencije, telekomunikacione kompanije sve više se okreću marketingu odnosa, kao sredstvu osiguranja lojalnosti kupaca izvedene iz dvije osnovne grupe prednosti za kompaniju: postojeće korisnike usluga je jeftinije i jednostavnije zadržati nego nastojati ponovo iste pridobiti (ako jednom napuste komapniju zbog lošeg kvaliteta ili zbog nezadovoljstva pruženom uslugom), (Bernes, J.G. and Hoelwett, D.M., 1988: 5-23) i osiguranje lojalnosti korisnika usluga dugoročno omogućava ostvarenje profitabilnosti (Reichheld, F.F., 1996). Logično je, da nastojanje i insistiranje na zadržavanju kupaca ne znači potpuno odustajanje od privlačenja novih potencijalnih kupaca i njihovog transformisanja u kupce po prvi put. Upravo oni predstavljaju izvor za osiguranje i izbor kupaca koje vrijedi zadržati i čiju lojalnost vrijedi pridobiti. Riječ je prije svega o redefinisanju prioritetnih ciljeva iz čega se izvodi spoznaja značenja srategije zadržavanja i postavki marketinga odnosa. Zahvaljujući tome se osigurava kreiranje sasvim novih ponuda koji će privući prije svega one kupce koji su skloni građenju veza sa kompanijom sa kojom posluju. Jedan od ključnih problema u realizaciji naprijed navedenih opredjeljenja je činjenica da ne postoje usaglašeni stavovi o tome koje dimenzije uslužne ponude imaju najveći značaj za kupce usluga i na osnovu toga najveće pretpostavke za zadržavanje istih kao korisnike usluga, nakon prvog uslužnog susreta. Situaciju dodatno komplikuje činjenica da su korisnici usluga danas sve više pod udarom različitih vrsta ponuda za "članstvom" i prihvatanjem favorizirajućih uslova izvedenih iz većeg broja transakcija i dužeg vremena saradnje. Pri tome je iznimno važno da kompanije ne insistiraju na građenju odnosa strategije zadržavanja korisnika po svaku cijenu. Kao što rade i kupci, i kompanije moraju znati kad treba odustati od nastojanja da se gradi lojalnost sa korisnicima koji ne predstavljaju vrijednost za pružaoca usluga (Babić-Hodović, V., Resić, E., Mehić, E. (2005:4). Naime, u aktuelnom savremenom trenutku, kupci telekomunikacijskih usluga postaju sve zahtjevniji i traže više usluga, više kvaliteta, više podrške, pa čak i više pažnje za svoj novac, što operaterima, pružaocima usluga konstatno nameće veće standarde u pružanju usluga. Da bi zadržali korisnike telekom operateri nastoje postići lojalnost svojih kupaca, kao korisnika usluga, kroz građenje marketing odnosa sa korisnicima, što je preduslov da će kupac nastaviti koristiti usluge, što telekom operateru obezbjeđuje siguran prihod (Aydin, S., Ozer, G., 2005:910-925).

Osim broja uslužnih interakcija neophodno je da prije samog formiranja odnosa dođe do međusobnog percipiranja da odnosi postoje, te da postojanje odnosa mora obilježiti specijalan status učesnika u razmjeni. Iz ovoga proizilazi da su odnosi nastali iz serije transakcija, iz čega se formira svijest o zajedničkim odnosima kroz građenje povjerenja i doprinosa kompaniji. Osim tržišnih faktora koji utiču na jačanje marketinga odnosa, neke vrste usluga po svojoj prirodi iziskuju građenje dugoročnih odnosa sa kupcima, kao što su telekomunikacione usluge. Vrsta same usluge direktno utiče na potrebu prilagođavanja koncepta marketinga i marketing strategije, različite elemente sekundarne dimenzije uslužne ponude, što će u većoj ili manjoj mjeri biti podsticaj građenju veza između telekom operatera i kupaca tih usluga(Palmer, A. and Cole, C., 1995:1-599). U skladu sa naprijed navedenim cilj istraživanja bio bi da se utvrdi koji su elementi uslužne ponude najznačajnija pretpostavka građenja dugoročnih odnosa sa kupcima, a polazeći od uvjerenja da će međusobna saradnja kreirati i osigurati vrijednosti za sve učesnike na dosta liberalizovanom i konkurentnom tržištu telekomunikacijskih usluga u Bosni i Hercegovini.

DIMENZIJE USLUŽNE PONUDE

Ključni motiv i opredjeljenje pri kupovini usluga je osiguranje korisnosti ili vrijednosti za kupca. Pri tome se različiti elementi objedinjuju u konačni output i proces koji kupac usluge iskusi tokom usluživanja (Palmer, A. and Cole, C., 1995:1-599). Za građenje odnosa u sferi usluga neophodno je da postoje dva uslužna susreta prije što se počne govoriti o mogućnosti građenja odnosa između dvije strane u uslužnoj razmjeni (Ljiljander V. end Strandvik, T., 1995:67-141; Stroback, K., Strandvik, T. and Gronroos,c, 1994:21-38). Prema Barnesovom (Bernes,J.G. and Howlett, D.M., 1988:5-23) mišljenju osim broja uslužnih interakcija neophodno je da prije samog formiranja odnosa dođe do međusobnog percipiranja da odnosi postoje, te da postojanje odnosa mora karaktezirati specijalan status učesnika u razmjeni. Iz ovoga proizilazi da su odnosi serija transakcija iz koje se formira svijest o zajedničkim odnosima kroz građenje povjerenja i doprinosa (Morgan, R.M. and Hunt, S.S., 1994:20-38).

Obzirom na visok nivo heterogenosti zahtjeva i preferencija kupaca usluga i njihovo neujednačeno opredjeljenje u pogledu značaja pojedinih elemenata za uspješan uslužni susret, preferiran je dvodimenzionalni oblik koncipiranja uslužne ponude. Tako se u ponudi usluga, u sferu suštinske usluge može smjestiti samo korist koju kupci imaju od ovih usluga, vezana za "mirnu savjest" ili smanjenje rizika, dok su svi ostali elementi ponude, bili opipljivi ili ne, smješteni u

nivo sekundarne usluge. Međutim, činjenica da je koncipiranje zahtjeva kupaca i spremnost kompanija da na njih odgovore kroz prilagođavanje i individualiziranje, tj. "jedan na jedan odnose", uslovila je visok nivo neujednačenosti u elementima uslužne ponude koju kupci traže. Stoga je sve teže izvršiti bilo kakvu generalizaciju na fascilitatorske i pojačavajuće usluge koja bi bila primjenjiva čak i za određeni segment kupaca. To je ključni razlog opredjeljenja za koncipiranimodel uslužne ponude. Model ostavlja mogućnost formiranja ponude koja je maksimalno prilagođena zahtjevima kupaca, te njeno kontinuirano obogaćivanje i dopunjavanje usmjereno na održavanje inovativne ili konkurentske prednosti (Babić - Hodović, V., Resić, E., Mehić, E., 2005:1-14).

Koncept podizanja nivoa zadovoljstva korištenjem usluga postao je snažno sredstvo u građenju dugoročnih odnosa sa kupcima. Naime, svaki kontakt kupca sa pružaocem usluga može biti ključni u stvaranju percepcije kupca spram pružaoca telekom usluga i samim tim postaju veoma bitne dimenzija uslužne ponude, kao što su:

- **Proces usluživanja,** koji počinje prvim kontaktom sa potencijalnim ili postojećim kupcima telekomunikacijskih usluga (usluge u telekomunikacijama nose još naziv i naziv teleusluge), čiji su nosioci mreže i traje kroz niz odnosa koje kupac ima sa pružaocem usluga u cijelom procesu korištenja usluga. Svaki kontakt kupca sa pružaocem usluga može biti ključni u stvaranju percepcije kupca spram pružaoca i samim tim postaje veoma bitna dimenzija uslužne ponude.
- **Kvalitet usluga,** koji je postao neupitan i podrazumjeva se kao preduslov za korištenje telekomunikacijskih usluga, te ga možemo posmatrati kao aksiom. Mora se održati u kontinuitetu, bez oscilacija, kako bi kupac stekao osjećaj sigurnosti i povjerenja u pružaoca usluga.
- **Marka i imidž,** se smatraju osnovom za građenja odnosa sa kupcem se gradi upravo na osnovu već poznatih činjenica o kvalitetu kako samih usluga i ugleda kompanije, tako i procesa usluživanja. Stvaranje marke kroz reklamu je neminovno, ali očuvanje te marke prventsveno zavisi od naprijed navedenih dimenzija uslužne ponude.
- **Materijalizacija ponude,** u smislu suštinske koristi koju kupac usluge dobija za svoj novac, uključujući i vizuelne elemente usluge čime se zajedno kod kupca gradi osjećaj neophodnosti potrebe za korištenjem te usluge, bez opcije o mogućnosti odricanja od korištenja usluge.
- **Raspoloživost usluga,** kao neophodni uslov za korištenje usluga u određenom vremenu i prostoru, u smislu realne pristupačnosti i dostupnosti usluge, sa svim potrebnim resursima za bezuvjetan komoditet u korištenju usluga.

EMPIRIJSKO ISTRAŽIVANJE

Metodološke postavke istraživanja

U istraživanju smo se koristitili metodom analize i sinteze, odnosno indukcije i dedukcije kod statističke analize uzoraka istraživanja. Istraživanje je provedeno na uzorku od 500 odabranih kupaca telekom usluga. Podaci su prikupljeni putem anketnog upitnika na području općine Zenica. Istraživanje je provedeno anketiranjem ispitanika koji su popunili upitnik u kome se od njih tražiti da putem Likertove sklale (od 1 do 5) ocjene stepen slaganja sa 26 izjava u kome su iznesene pretpostavke o elementima ponude, koje uslužna kompanijatreba osigurati da bi stvorile pretpostavke za građenje dugoročnih odnosa između korisnika i pružaoca usluga. Prikaz osnovnih karakteristika uzorka istraživanja dat je u Tabeli 1.

Tabela 1. Osnovne karakteristike uzorka istraživanja

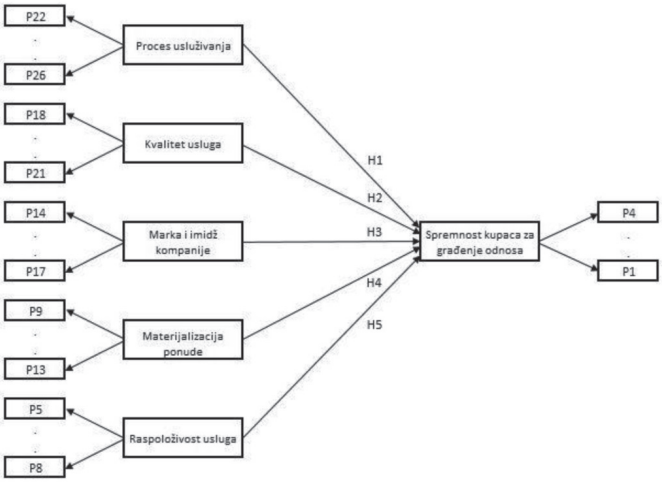
Varijable	Kategorije	Frekvencija	%
Spol	Ženski	178	35,60%
	Muški	322	64,40%
Starosna dob	Manje od 20 godina	47	9,00%
	20-24 godine	173	33,1%
	25-34 godine	215	41,1%
	Više od 34 godine	88	16,8%
Vremenski period korištenja usluga telekom operatera	Manje od 6 mjeseci	6	1,1%
	7-12 mjeseci	50	9,6%
	13-24 mjeseci	153	29,3%
	25-36 mjeseci	208	39,8%
	Više od 36 mjeseci	106	20,3%
Telekom operator	BH Telecom Zenica	500	100,0%

Izvor: autori rada

Predloženi teorijski model mjerenja

Polazeći od pretpostavke da dimenzije uslužne ponude proces usluživanja, kvalitet usluga, marka i imidž, raspoloživost usluga i materijalizacija ponude predstavljaju najznačajnije poddimenzije koje kupci participiraju kao ključne za građenje odnosa sa telekom operaterom predložen je teorijski model uticaja poddimenzija uslužne ponude na dimenziju građenje odnosa sa telekom operaterom koji je prikazan na Slici 1., pri čemu se oznake *p1-p4, p5-p8, p9-p13, p14-p17, p18-p21*

i p22-p26 odnose na niz pitanja koja odgovaraju pojedinim faktorima u anketnom upitniku.



Slika 1. Predloženi teorijski model mjerenja

Izvor: kreacija autora

Polazeći od navedenih teorijskih postavki modela, te osnovnih elemenata sadržanih na nivou sekundarnih dimenzija uslužne ponude (više o sekundarnom modelu u: Palmer, A. and Cole C., 1995) istraživanje je provedeno među korisnicima usluga kompanije BH Telecom d.o.o. Zenica sa ciljem utvrđivanja njihovih stavova o pojedinim elementima uslužne ponude, koji su pretpostavka za građenje dugoročnih odnosa sa telekom operaterom. Stoga teorijski model koji je je prikazan na Slici 1., ima strelice koje određuju uzročno-posljedične veze i usmjerene na desnu stranu. Svaka od strelica predstavlja jednu od hipoteza *(proces usluživanja* $\boldsymbol{H_1}$*, kvalitet usluge* $\boldsymbol{H_2}$*, marka i imidž* $\boldsymbol{H_3}$*, materijalizacija ponude* $\boldsymbol{H_4}$ *i raspoloživost usluge* $\boldsymbol{H_5}$*).*

Prikazan dijagram modela uticaja poddimenzije: proces usluživanja, kvalitet usluga, marke i imidža, materijalizacije ponude i raspoloživosti ponude na dimenziju spremnost kupaca za građenje odnosa kao i njihov međusobni odnos. Pri ovoj analizi smo prihvatili shvatanje da će se spremnost kupaca za građenje odnosa sa telekom opareterom graditi prije svega na bazi tzv.tvrdih dimenzija kao što je proces usluživanja, kvalitet usluga, marke i imidža, materijalizacije ponude i raspoloživosti ponude.

Za potrebe istraživanja ovi su elementi tranformisani u elemente dimenzija uslužne ponude iz modela prilagođene potrebama rada prema originalnom modelu Palmer, A.i Cole, C. i to polazeći od pretpostavke o logici ponašanja kupaca pri kupovini telekom usluga. U istraživanju je obavljeno testiranjem strukturnog modela te analiza kovarijansne strukture konfirmatornom faktorskom analizom (CFA).

U skladu sa istim postavljene su sljedeće hipoteze za potrebe istraživanja:
H_1: Poddimenzija proces usluživanja ima značajan pozitivan uticaj na dimenziju spremnost kupaca za građenje odnosa sa telekom operaterom;
H_2: Poddimenzija kvalitet usluga ima značajan pozitivan uticaj na spremnost kupaca za građenje odnosa sa telekom operaterom;
H_3: Poddimenzija marka i imidž kompanije ima značajan pozitivan uticaj na dimenziju spremnost kupaca za građenje odnosa sa telekom operaterom;
H_4: Poddimenzija materijalizacija ponude ima značajan pozitivan uticaj na dimenziju spremnost kupaca za građenje odnosa sa telekom operaterom;
H_5: Poddimenzija raspoloživost usluga ima značajan pozitivan uticaj na dimenziju spremnost kupaca za građenje odnosa sa telekom operaterom.

REZULTATI ISTRAŽIVANJA

Ispitivanje pouzdanosti mjerne skale

Mjerna skala za potrebe istraživanje mora biti pouzdana. Pouzdanost se može posmatrati s više aspekata. Jedno od najvažnijih pitanja odnosi se na unutrašnju saglasnostskale, to jest srodnosti (jednodimenzionalnosti) iskaza od kojih mjerna skala sastoji. Najčešće korišteni pokazatelj unutrašnje saglasnosti je Cronbach-α (alfa) koeficijent. U idalnom slučaju bi ovaj koeficijent trebao da bude veći od .7. Međutim, njegove vrijednosti su veoma osjetljive na broj iskaza na skali i heterogenost uzorka.

Na podacima iz našeg uzorka ispitivanja unutrašnje saglasnosti svake podskale izvršeno je u skladu sa pitanjima koji se odnose na odgovarajuće dimenzije, posredstvom mjernog instrumenta. Dakle, na odgovorima ispitanika analizirali smo srodnost određenih pitanja da li oni/a mjere odgovajuće faktore odnosno dimenzije.

U Tabeli 2., dat je prikaz vrijednosti Cronbach-α koeficijenta odgovajućih varijabli koje se odnose na pojedine faktore *(F_1, F_2, F_3, F_4, F_5 i F_6)*. Test mjeri iste faktore neovisno o tome jesu li ispitanici muškarsci ili žene, mladi ili stari ljudi, većina ili manjina, itd.

Tabela 2. Vrijednosti Cronbach-α koeficijenta

Faktori/dimenzije	Varijable	Broj pitanja	Cronbach-α
Proces usluživanja **(F_1)**	p22 - p26	5	.913
Kvalitet usluga **(F_2)**	P18 - p21	4	.884
Marka i imidž kompanije **(F_3)**	p14 - p17	4	.879
Materijalizacija ponude **(F_4)**	p9 - p13	5	.897
Raspoloživost usluga **(F_5)**	p5 - p8	4	.882
Spremnnost kupaca za građenje odnosa **(F_6)**	p1- p4	4	.868

Izvor: autori rada

Na temelju vijednosti Cronbach-α koeficijenta dobivenih putem SPSS programa može se zaključiti kako primijenjene mjerne podskale posjeduje idealne nivoe pouzdanosti i kreću se u rasponu od .868 do .913.

SEM ANALIZA (STRUKTURAL EQUATION MODELING)

Testiranje prikladnosti teorijskog sa empirijskog modelom

SEM (engl. Struktural Equation Modeling) predstavlja multivarijantnu statističku tehniku koja predstavlja kombinaciju konfirmatorne faktorske analize (CFA-Confirmatore Factor Analysis), PA (engl. Path Analizis) i regresijske analize i primjenjuje se u analizi hipotetičkih odnosa između endogenih (varijabli koje se ne mogu direktno izmjeriti) i egzogenih (varijabli koje se mogu direktno mjeriti) varijabli. Koristeći statistički program AMOS koji se koristi za modeliranje i simulacije. SEM statističku analizu i obradu podataka kao i grafički prikaz rezultata SEM analize (Byrne, B., 2010; Bollen, R.N., 1989: 2-432) izvršena je provjera postavljenih hipoteza, a kao osnova za testiranje postavljenih hipoteza i analize podataka, poslužila nam je konfirmatorna faktorska analiza (CFA), kao multivarijacijska metoda analize.

Kao preduslov za ocijenu prikladnosti predloženog modela neophodno je ispunjenje visoko zahtjevnog uslova koji se odnosi na validnost i pouzdanost mjernog instrumenta i sastoji se u provjeri jednodimenzionalnosti mjerne skale, odnosno provjeri sposobnosti mjernog instrumenta da njegovim korištenjem dobijemo konzistentne rezultate. Važno je znati da nisu svi modeli podesni za testiranje različitih djelatnosti. Jer, bezbroj modela može odgovarati istim podacima. Nisu, također, jednaki za velike i za male privredne subjekte. Zato menadžeri trebaju odabrati one mjerne modele koji su im najpouzadniji i objektivno omogućavaju

kontinuirano praćenje, ovisno o objektivnim ograničenjima koja se za testiranje modela postavljaju. Međutim, to nije dovoljno. Potrebno je znati testirati pojedini model, a onda ih znati objasniti, te na osnovu njihovih rezultata donijeti i odgovarajuće odluke, a da se u tome uspije mora se u potpunosti razumjeti pojedini model mjerenja uslužne ponude (Huseinspahić, N., 2013:1-523).

Prikladnost modela smo testirali korištenjem mjera koje obuhvaćaju indekse koji trebaju pokazati stepen prikladnosti modela: indeks dobre prikladnosti (GFI), indeks komparativne prikladnosti (CFI), indeks normirane prikladnosti (NFI), indeks rezidualne prikladnosti (RMR),Tucker-Lewisov indeks prikladnosti(TLI) te hi-kvadrat test (x^2).U Tabeli 3., dat je prikaz indeksa kojima se mjeri stepen prikladnosti modela.

Tabela 3. Indeks prikladnosti predloženog modela sa empirijskim modelom mjerenja

Indeksi prilagođenja	χ2/df	RMR	GFI	NFI	RFI	IFI	TLI	CFI	RMSEA
Vrijednost	1,736	,022	,902	,918	,906	,963	,958	,963	**,027**
Granične vrijednosti	< 3	< ,08	> ,9	> ,9	> ,9	> ,9	> ,9	> ,9	**< ,05**

Izvor: autori rada

Indeksi, x^2/df (engl.Chi square to of freedom), NFI (engl. Normed Fit Indeks), TLI (engl. Tucker Lewis Indeks), CFI (engl. Comparative Fit Indeks), IFI (engl. Incremental Fit Indeks) i RFI (engl. Relative Fit Indeks) predstavljaju relativne pokazatelje prikladnosti postavljenog modela sa dva referentna modela: mjernog modela i idealnog modela, dok indeksi GFI (engl. Goodness of Fit Indeks), AGFI (engl. Adjusted Goodness of Fit Indeks), RMR (engl. Root Mean square Residuals) i RMSEA (engl. Root Mean Error of Approximation) predstavljaju apsolutne pokazatelje prikladnosti postavljenog modela i opaženih podataka (Schumacer, R., Lomax, R., 2004:4-513).

Rezultati konfirmatorne faktorske analize indiciraju da su podaci prikladni modelu,(x^2/df=1,736; RMR = .022; GFI = .902; NFI = .918; IFI = .963; RFI = .906; TLI= .958 i RMSEA = .027 uz graničnu vrijednost koje < .05.

Holterov indeks pokazuje pri kojem broju ispitanika i uz koji nivo pogreške modela bi bio odbijen. Napominjemo da je 500 ispitanika veličina uzorka.

Prema Holterovom indeksu 341 ispitanik uz nivo .5 bi bio odbijen.

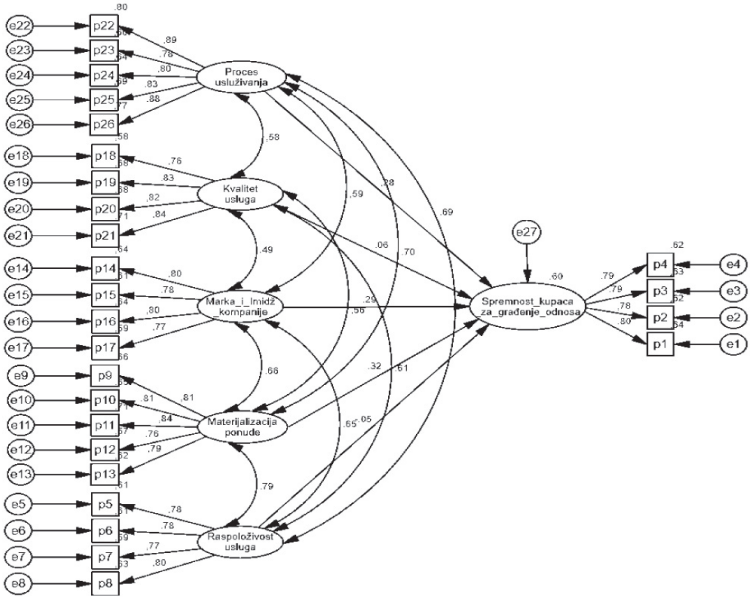
Na osnovu indeksa dobre pogodnosti modela možemo zaključiti da je testirani model prilagođen podacima, što indicira prihvatljivu prikladnost testiranog modela.

Vrijednosti dobivenih indeksa upućuju na zaključak da je nivo prikladnosti definisanog modela podacima zadovoljavajući, tj. postoji preklapanje empirijske i ciljne matrice, te je definisani model prihvatljiv i za daljnu analizu.

Prikupljeni podaci analizirani su putem statističkog programa SPSS (engl. Statistical Package for the Social Sciences) i AMOS (engl. Analysis of Moment Struktures).

Koristeći statistički program AMOS koji je alat za SEM modeliranje i simulacije. SEM statističkom analizom i obradom podataka kao i grafičkim prikazom rezultata SEM analize, izvršena je provjera postavljenih hipoteza.

Nakon sprovodene SEM analize prvo se pristupilo utvrđivanju stepena prikladnosti predloženog teorijskog modela s empirijskim modelom.



Slika 2. AMOS empirijski model međusobnih uticaja varijabli saizračunatim standardiziranim parametrima

Na Slici 2., je prikazan dijagram strukturnog modela prvog reda. Na njemu je prikazan uticaj poddimenzija uslužne ponude na dimenziju spremnost kupaca za građenje dugoročnih odnosa sa pružaocem usluge sa izračunatim parametrima posredstvom AMOS programskog rješenja (Schumacer, R., Lomax, R., 2004:4-513) koji se koristi za SEM modeliranje i simulacije odnosno testiranje empirijskog modela, pri čemu oznake *e1-e26* predstavljaju rezidualne vrijednosti (nastaju pod uticajem faktora na koje se ne može uticati) egzogenih varijabli *p1-p26*, dok oznaka *e27* predstavlja rezidualnu varijansu endogene varijable. Važno je znati da smjer strelica u empirijskom modelu ne određuje uzročno-posljedičnu vezu. Naime, strelice koje imaju drugačiji smjer u empirijskom modela (Slika 2.) pokazuju od kojih poddimenzija se sastoji dimenzija spremnost kupaca za građenje dugoročnih odnosa **(F_6)**.

Tabela 4. Korelacija između dimenzija modela

Dimenzije /faktori	**Raspoloživost usluga**	**Materijalizacija ponude**	**Marka i imidž kompanije**	**Kvalitet usluga**	**Proces usluživanja**	**Spremnost kupaca za građenje odnosa**
Raspoloživost usluga	1					
Materijalizacija ponude	**.651**	1				
Marka i imidž kompanije	.542	.511	1			
Kvalitet usluga	.560	.564	.532	1		
Proces usluživanja	.636	.607	.509	.540	1	
Spremnost kupaca za građenje odnosa	.580	.615	.561	.517	.542	1

Izvor: autori rada (Izvještaj iz AMOS programskog modula)

Ocjena parametara empirijskog modela

U Tabeli 5., prikazani su procjenjeni parametari, standardne greške, t-vrijednost i p-vrijednosti. Vidljivo je da je p-vrijednost za relaciju poddimenzija marka i imidž kompanije i materijalizacija ponude sa spremnošću kupaca za građenje dugoročnih odnosa manja od $^{***}p< .001$, što znači da postoji značajan pozitivan uticaj dimenzije marka i materijalizacija ponude na dimenziju spremnost kupca za građenje odnosa. Vidljivo je se da je p-vrijednost za relaciju poddimenzije raspoloživost usluge te dimenzije spremnost kupaca za građenje odnosa manja je od .05 što znači da postoji značajan pozitivan uticaj poddimenzije raspoloživost usluge na dimenziju spremnost kupaca za građenje odnosa.

Tabela 5. Standardizirani koeficijenti

Endogene varijable		Egzogene varijable	Procjenjeni parametri	Standardna greška	t-vrijednosti	p-vrijednosti
Spremnost kupaca za građenje odnosa	<---	Proces usluživanja	.095	.052	1,836	.066
Spremnost kupaca za građenje odnosa	<---	Kvalitet usluga	.076	.046	1,657	.098
Spremnost kupaca za građenje odnosa	<---	Marka i imidž kompanije	.209	.049	4,270	***
Spremnost kupaca za građenje odnosa	<---	Materijalizacija ponude	.290	.065	4,487	***
Spremnost kupaca za građenje odnosa	<---	Raspoloživost usluga	.149	.063	2,368	.018

Izvor: autori rada

Za relaciju poddimenzije kvalitet usluge te spremnost kupaca za građenje odnosa, kao i za relaciju poddimenzije proces usluživanja te spremnost kupaca za građenje odnosa, p-vrijednost je veća od .05 što znači da *ne postoji* statistički značajan pozitivan uticaj poddimenzije kvalitet usluga i proces usluživanja na dimenziju spremnosti kupaca za građenje odnosa. Možemo zaključiti da na postavljenom nivou značajnosti α=5%, poddimenzije marka i imidž kompanije, materijalizacija ponude i raspoloživost usluga imaju *značajan pozitivan* uticaj na dimenziju spremnosti kupaca za građenje odnosa, dok poddimenzije kvalitet usluga i proces usluživanja nemaju značajan pozitivan uticaj.

Prema Tabeli 5., na faktor spremnost kupaca za građenje odnosa najviše utiče podimenzija materijalizacija ponude jer ima najveći procijenjeni koeficijent .290. Slijedi poddimenzija marka i imidž kompanije sa koeficijentom .209, dok uticaj naslabijeg inteziteta ima podimenzija kvalitet usluge koji ima koeficijent .076. Dakle, nisu svi strukturni koeficijenti statistički značajni, niti su predviđenog pozitivnog smijera, i poddimenzija spremnost kupaca za građenje odnosa najvećim dijelom zavisi od poddimenzija materijalizacije ponude i marka i imidž kompanije i raspoloživost usluge, dok najmanje zavisi od poddimenzija kvalitet usluga i proces usluživanja.

Rezultirajući standardizirani strukturni koeficijenti upućuju na zaključak da se hipoteze $\boldsymbol{H_1}$ *i* $\boldsymbol{H_2}$ ne mogu smatrati potvrđenim, dok se hipoteze $\boldsymbol{H_3}$, $\boldsymbol{H_4}$ *i* $\boldsymbol{H_5}$ mogu smatrati potvrđenim.

PREPORUKE ZA BUDUĆA ISTAŽIVANJA

Obzirom da su istraživanja provedena bez posebnog specificiranja ili ocjene pojedinih vrsta usluga, te da prema osnovnim karakteristikama usluga postoji vrlo često značajna razlika između različitih vrsta usluga, bilo bi potrebno izvršiti istraživanje koje će "mjeriti" različite vrste telekomunikacijskih usluga primjenom cijelovitog modela za dimenzije uslužne ponude. Cjeloviti modeltreba mjeriti na osnovu spremnosti kupaca za građenje odnosa i privlačenje novih kupaca a slijedom toga i lojalnost kupaca te ostvarenu profitabilnost po osnovu novih kupaca.

DISKUSIJA

Značajno je naglasiti da upotreba mjernih instrumenata od strane menadžmenta telekom kompanije ne bi smjela biti sporadičnog karaktera nego kontinuirana, što znači da se mjerenja trebaju provoditi neprekidno u unaprijed određenim razmacima za svaki odabrani model. Osim toga, pri odabiru potrebnog modela poslovni subjekt mora prethodno izvršiti selekciju raspoloživih modela u odnosu na mjernu relevantnost koja je vezana za njihovu pouzdanost i validnost, odnosno na jasnoću iskaza u odnosu na raspoloživost informacijske osnove za njihovo testiranje. Dakle, top menadžment telekom kompanije mora prepoznati kompentencije mjerenja kao dio šire poslovne kulture organizacije.

ZAKLJUČAK

Provedeno istraživanje produbljuje spoznaje o uticaju dimenzija uslužne ponude na spremnost kupaca za građenje odnosa što se smatra ključnom pretpostavkom za lojalnost kupaca prema kompaniji. Primjenom strukturnog modela jednadžbi testirane su postavljene hipoteze. Potvrđene su tri hipoteze na nivou statističke značajnosti. Strukturni koeficijenti su statistički značajni i predviđenog su smjera. Na osnovu rezultata istraživanja može se zaključiti da tri dimenzije uslužne ponude imaju direktan i pozitivan uticaj na dimenziju spremnost kupaca za građenje odnosa sa kompanijom BH Telekom Zenica. Potvrdili smo da poddimenzije marka i imidž kompanije, materijalizacija ponude i raspoloživost ponude pozitivno i direktno utiču na spremnost kupaca za gradnju odnosa, ali različitom snagom te da postoji korelacija između navedenih poddimenzija. Poddimenzija materijalizacija ponude najviše utiče na dimenziju spremnost kupaca za građenje odnosa, potom slijedi poddimenzija marka i imidž kompanije te poddimenzija raspoloživost usluge. Uticaj naslabijeg inteziteta ima podimenzija kvalitet usluge koji se od strane korisnika vijerovatno unaprijed podrazumjeva. Može se zaključiti da dimenzija spremnost kupaca za građenje odnosa najviše zavise od poddi-

menzije materijalizacija ponude a najmanje od poddimenzija kvaliteta usluga i raspoloživosti usluge, što je pretpostavka za određeni nivo profitibilnosti, stvaranje novih vrijednosti, povećanje likvidnosti kompanije i povećanje finansijske snage preduzeća. Intenzivna ponuda sličnih telekom usluga, te rastuća suplementarnost ponuđenih usluga koje kupcima stoje na raspolaganju nameću potrebu stalnog diferenciranja usluga od strane kompanije. Značaj podataka prikupljenih ovim istraživanjem povećava se ako ih smjestimo u kontekst činjenice da je zadržavanje postojećih kupaca mnogo jeftinije za kompaniju nego osvajanje novih, a jednostavnija je procedura poslovanje sa postojećim kupcima, te stoga BH telekom Zenica sve više pažnje i vremena treba poklanjati građenju međusobnih odnosa sa kupcima kao ključnompretpostavkom za lojalnost kupaca i osiguranje ponovljenih kupnji.

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DIMENSIONS OF SERVICE OFFER, AS AN ASSUMPTION OF BUILDING LONG TERM RELATIONS WITH THE CUSTOMERS OF TELECOMMUNICATION SERVICES

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Abstract: *The purpose of this paper is expressed in the need to research the significance of individual dimensions of service offers for customers and their influence to readiness to build long-term relations with the company BH Telecom Sarajevo. The subject of the research are dimensions of service offers and their influence to the possibility of building long-term relations and cooperation between service provider and customers, namely inclinations of customers to "get attached" to their telecom provider. The goal of the research is defined in the need to ascertain which sub-dimensions of service offer is the most significant assumption of building long-term relations with customers, starting with the belief that mutual cooperation will be created and that it will ensure values for participants in the service process. The research deepens the comprehension of the influence of dimensions of service offer to the willingness of buyers for building of relations, which is considered to be a key assumption for customer loyalty to the company. Based on the results of research it is possible to conclude that three sub-dimensions of service offer have a direct and positive influence to the dimension of willingness of customers for building relations with the company BH Telecom, which include materialization of offer, followed by the brand and company image, whereas it least depends on the service quality and process of service providing, which refers to the conclusion that the customer perceives in advance satisfactory level of quality and level of provided service.*

Keywords: *measuring, service offer, AMOS research*

JEL: *M53, C4, C42*

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ORIGINALNI NAUČNI RAD / ORIGINAL SCIENTIFIC PAPER

IMPLEMENTACIJA MODELA PARK & RIDE SISTEMA U SARAJEVU

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Sažetak: *Prilikom analize saobraćajnog sistema u Sarajevu bazirat ćemo se na analizi opterećenosti i intenziteta korištenja putničkih automobila, analizi broja javnih parkirališta u centru grada, te na mogućnostima implementacije Park & Ride sistema. Prema podacima sa automatskih brojača saobraćaja u uže gradsko jezgro grada Sarajeva ulazi 29.822 vozila PGDS-a, a iz grada izlazi 32.877 vozila PGDS-a. Česta su čekanja koja traju 2-3 semaforska ciklusa na dionicama, što nam govori o samoj potrebi izgradnje inovativnih rješenja koja čine sastavni dio svakog koncepta "Pametnih gradova". U ovom radu je primijenjena metoda AHP koja daje dobru osnovu za višekriterijsko vrednovanje i rangiranje budućih Park & Ride objekata. Metoda AHP je i inače pogodna za upotrebu u slučajevima kada čisti ekonomski kriteriji ne mogu biti dostatni za donošenje konačnih odluka. U ovom radu su također na temelju kritičke analize prethodnih iskustava i istraživanja provedenih od strane autora definisani glavni kriteriji koje je potrebno primijeniti u planiranju razvoja Park & Ride objekata. Također smo definisali 8 lokacija koje se nalaze na samim ulazima u uže gradsko jezgro grada Sarajeva, a koje su povezane direktno sa infrastrukturom javnog gradskog prijevoza, odnosno koje bi bile idealne za implementaciju Park & Ride koncepta.*

Ključne riječi: *Pametni gradovi, urban management, P&R sistem, PGDS.*

JEL klasifikacija: *R41, R42, Q55*

UVOD

Sarajevo predstavlja glavni, kulturni, historijski i ekonomski centar Bosne i Hercegovine, u kojem prema teritorijalnoj podjeli na četiri opštine i popisu stanovništva iz 2013. godine živi 275.524 stanovnika[1]. Pošto je Sarajevo najveći urbani centar Bosne i Hercegovine, za očekivati je i da se tu nalaze najveći saobraćajni tokovi koji saobraćaju u ovoj zemlji. Iz tog razloga je proizašla potreba da se minimiziraju ili eliminišu određeni saobraćajni tokovi u gradskom jezgru grada Sarajeva uz primjenu Park & Ride sistema, a sve to sa ciljem smanjenja zagušenja i zagađenja u gradu Sarajevu. Ukoliko posmatramo podatke o stepenu motorizacije u periodu od 2008. – 2017. godine u kantonu Sarajevu, uočićemo da je evidentan konstantan porast broja motornih vozila. U posmatranom vremenskom periodu od 10 godina broj registrovanih motornih vozila se povećao sa 119.081 na 143.428,[2] tj. za 16,97%, što nam ukazuje na to da se broj motornih vozila u kantonu Sarajevu prosječno godišnje povećavao za 2.435 motornih vozila, ili za vrijednost od 1,697%. S obzirom na prethodno navedeno, možemo konstatovati da je u Sarajevu saobraćaj glavni pokretni izvor zagađenja zraka, čiji nesagorjeli produkti izduvnih gasova u određenim dijelovima grada prelaze dozvoljene granice i do 10 puta. Glavni problem u rješavanju zagušenja u Sarajevu predstavljaju jutarnje, popodnevne i poslijepodnevne gužve kad ljudi putuju na posao ili se pak vraćaju s posla. Uvođenjem Park & Ride koncepta u Sarajevo se neće riješiti svi problemi sa zagušenjem, ali će se definitivno doprinijeti smanjenju broja vozila koja nepotrebno ulaze u gradsko jezgro. Također će se doprinijeti većem korištenju javnog gradskog prijevoza, a samim time će se smanjiti i intenzitet zagušenja zraka.

SVRHA ISTRAŽIVANJA

Glavni cilj istraživanja jeste predložiti inovativno rješenje uz čiju implementaciju bi se riješili veliki saobraćajni problemi koji se tiču glavnog grada Bosne i Hercegovine. U pomenute saobraćajne probleme prema Strategiji razvoja kantona Sarajevo se navode sljedeći[3]:

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[1] Federalni zavod za statistiku (2013). Konačni rezultati popisa 2013. godine, <http://fzs.ba/index.php/popis-stanovnistva/popis-stanovnistva-2013/konacni-rezultati-popisa-2013/>. Pristupljeno 01. septembra 2018.

[2] Bosanskohercegovački auto – moto klub. Informacija o ukupnom broju registrovanih i prodatih novih motornih vozila u Bosni i Hercegovini 2008. – 2017. <http://bihamk.ba/index.php?option=com_content&view=article&id=10&Itemid=147>. Pristupljeno 01. septembra 2018.

[3] Vlada Kantona Sarajevo (2012). Strategija razvoja Grada Sarajeva 2012-2020.

- preopterećenje saobraćajem kako centralnih tako i perifernih dijelova grada,
- neadekvatna rješenja za mirujući saobraćaj,
- izrazito visok nivo zagađenja zraka uzrokovan povećanim gradskim saobraćajem, dotrajalom komunalnom infrastrukturom, te negativnim geomorfološkim uslovima, i
- saobraćajna buka.

Park & Ride koncept sam po sebi predstavlja terminale gdje se vrši transfer putnika iz motornih vozila na vozila javnog gradskog prijevoza. Najbitnija spoznaja kod bilo kakvog tipa projektovanja Park & Ride koncepta je postupak određivanja potencijalne gravitacijske zone, jer gravitacijska zona između ostalog određuje i eventualni broj parkirnih mjesta Park & Ride sistema. Istraživanja provedena u praksi pokazuju da gravitacijska područja ovise isključivo o tipu i vrsti urbaniteta. Nije pravilo, ali je potreba da područja s velikim brojem stanovništva imaju dobro isplaniranu i opsluženu mrežu saobraćajnica sa sredstvima javnog gradskog saobraćaja. Analogno prethodno navedenom bi se moglo zaključiti da je kod male gustine naseljenosti loša i saobraćajna mreža javnog gradskog prijevoza. Implementacijom Park & Ride modela u Sarajevu bi došlo do rasterećenja saobraćaja u urbanim dijelovima grada za oko 25 % od ukupnog broja vozila, te bi se poboljšao kvalitet parkirališnih prostora saobraćaja u mirovanju. Pored navedenog, reduciranje saobraćajnog opterećenja u gradskoj zoni bi dovelo i do reduciranja smanjenja zagađenja u urbanim dijelovima grada, te bi se samim time i smanjila saobraćajna buka u dnevnim i večernjim satima. Samom implementacijom Park & Ride koncepta bi se u velikoj mjeri riješili problemi koji su definisani kao krucijalni u Strategiji razvoja kantona Sarajeva.

MODEL PARK & RIDE SISTEMA U EVROPSKOJ UNIJI

Iskustva Evopske Unije u planiranju i ocjeni učinkovitosti sistema Park & Ride su specifična i svako od njih ima svoje vlastite karakteristike, odnosno obilježja koja ga determinišu (tabela 1.). U narednoj tabeli je dat prikaz broja stanovnika, Park & Ride lokacija i parkirališnih mjesta po pojedinim gradovima u EU. Malo je zajedničkog u dosadašnjim konceptima, osim naravno osnovnog načela: parkiraj motorno vozilo i nastavi putovanje sa vozilima javnog gradskog prijevoza. Park & Ride objekte moguće je klasificirati na više načina, a jedan od njih se temelji na modalitetu javnog gradskog prijevoza, tako da se mogu razlikovati:

- Park & Ride objekti kombinirano uz autobuske, minibuske, šinske i trolejbuske sisteme javnog gradskog prijevoza,
- Park & Ride objekti uz autobuske sisteme javnog gradskog prijevoza,

- Park & Ride objekti uz minibuske sisteme javnog gradskog prijevoza,
- Park & Ride objekti uz šinske sisteme javnog gradskog prijevoza, i
- Park & Ride objekti uz trolejbuske sisteme javnog gradskog prijevoza.

Pored navedenih, mogu se koristiti i Park & Ride objekti uz taksi stajališta.

Tabela 1. Broj stanovnika, Park & Ride lokacija i parkirališnih mjesta po gradovima u EU

Grad	Broj stanovnika	Broj Park & Ride lokacija	Broj parkirališnih mjesta
Amsterdam	743.000	5	1.278
Beč	1.682.000	6	6.226
Budimpešta	1.696.000	25	3.384
Berlin	3.423.000	44	4.947
Hamburg	1.773.000	49	9.409
Helsinki	568.000	27	3.163
Köln	995.000	28	5.570
Luksemburg	86.000	5	4.116
Ljubljana	279.000	1	217
München	1.315.000	24	7.128
Pariz	2.166.000	28	5.849
Prag	1.195.000	17	3.196
Rim	2.708.000	31	12.880
Stockholm	795.000	22	3.000
Ženeva	447.000	19	4.854

Izvor: Krasić i Lanović (2013)

Ukoliko posmatramo prethodnu tabelu, uočićemo izuzetno veliku razliku u gradovima EU po broju Park & Ride lokacija, pa se može lahko uočiti da njemački gradovi Hamburg i Berlin krase vrh tabele sa ukupno 93 Park & Ride lokacije, odnosno Hamburg sa 49 Park & Ride lokacija i sa 9.409 parking mjesta, te Berlin sa 44 Park & Ride lokacije i sa 4.947 parking mjesta. Zatim ih slijede Köln i Pariz sa po 28 Park & Ride lokacija. Najmanje Park & Ride lokacija ima Ljubljana, Luksemburg, Amsterdam i Beč. No, ukoliko se posmatra broj parking mjesta po broju stanovnika, može se zaključiti da su na dnu skale gradovi poput Amsterdama, Berlina, Budimpešte i Ljubljane koji imaju najviše dva parkirna mjesta na 1.000 stanovnika. Daleko najrazvijeniji gradovi sa brojem Park & Ride

lokacija su Luksembourg i Ženeva, pri čemu je prvi teško dostižan po razvijenosti ovog sistema jer sa samo 86 hiljada stanovnika ima više od 4 hiljade parkirnih mjesta u sistemu Park & Ride, odnosno 48 parkirnih mjesta na 1000 stanovnika. S obzirom na broj od 1.000 stanovnika, Ženeva ima 11 parkirnih mjesta, dok u Ljubljani na 1.000 stanovnika otpada 1 nepuno parking mjesto. Prijestolnica Savezne Republike Njemačke ima ukupno 1,5 parking mjesta na 1.000 stanovnika, dok Hamburg, München, Köln i Helsinki imaju više od 5 parking mjesta. Na istu vrijednost uzorka od 1.000 stanovnika, Pariz i Prag imaju više od 2,5 parking mjesta, dok Rim ima oko 4,5 parking mjesta, a Stockholm ima 3,5 parking mjesta, a Amsterdam i Beč imaju nepuna 2 parking mjesta na 1.000 stanovnika. Možemo slobodno reći da prosječni kapacitet parkirališnog objekta u sistemu Park & Ride, uzimajući u obzir sve navedene gradove ima isuviše nisku vrijednost, na osnovu koje se može zaključiti da na prostoru EU se može itekako još raditi na poboljšanjima Park & Ride koncepta.

KRITERIJI ZA ODREĐIVANJE PRIORITETA ZA PLANIRANJE PARK & RIDE MODELA PRIMIJENJENI ZA GRAD SARAJEVO

Prema autorima Davor Krasić i Zdenko Lanović (2013) veličina gravitacijskog područja Park & Ride lokacije je samo jedan od kriterija pri određivanju prioriteta kod izbora najbolje lokacije. Krasić i Lanović (2013) navode da cijeli sistem nije moguće realizovati samo jednim kriterijem, jer su troškovi izgradnje parkirališta/garaža i uređenja stajališta javnog gradskog prijevoza po pravilu vrlo visoki. Iz navedenog razloga je potrebno za grad Sarajevo izabrati 5 kriterija za kvalitetno vrednovanje potencijalnih i postojećih Park & Ride lokacija:

- kvaliteta ponude javnog gradskog prijevoza,
- lakoća realizacije s troškovnog i tehničkog aspekta,
- multifunkcionalnost Park & Ride lokacije,
- pristup do stajališta javnog gradskog prijevoza, i
- veličina gravitacijskog područja Park & Ride lokacije.

Prvi navedeni kriterij se odnosi na kvalitetu javnog gradskog prijevoza. Odnosno, ukoliko neki grad ili uprava grada odluči da investira u Park & Ride sistem, ona mora biti svjesna da pored navedene investicije je neophodno da se investira i u sredstva javnog gradskog prijevoza sa ciljem povećanja kvaliteta pružanja usluge sa navedenim servisom. Što se tiče lakoće realizacije sa troškovnog i tehničkog aspekta, bitno je napomenuti da su najizgledniji za implementaciju Park & Ride sistemi upravo oni koji zahtjevaju niske troškove prilikom izgradnje. Jer, ukoliko se prijedlog koncepta Park & Ride sistema zasniva na kompletnoj novoj izgradnji

ili na neuređenim parkirališnim površinama, onda je najvjerovatnije da će takav Park & Ride koncept ostati samo puki registar želja, jer skupoća urbanih parcela će sama po sebi eliminisati dalje pokušaje koji se tiču planiranih investicija. Ukoliko se razmatra kriterij multifunkcionalnosti, možemo zapravo konstatovati da on analizira Park & Ride lokaciju tokom dana i sedmice, te analizira da li se lokacija koristi isključivo za parkiranje sa ciljem prelaska na javni gradski prijevoz ili se koristi i za druge svrhe. Osim postojećih Park & Ride lokacija može se navesti još nekoliko potencijalnih lokacija sa uređenim i sa neuređenim parkirališnim površinama. Ukoliko se razmatra kriterij pristupa do terminala javnog gradskog prijevoza, možemo slobodno zaključiti da je ovo jedan od najbitnijih stavki jer, ukoliko se i uspije implementirati Park & Ride sistem, pristup do istog mora biti vrlo jednostavan i "privlačan" budućim korisnicima, koji će sa lakoćom moći koristiti isti. Kao posljednji kriterij se navodi veličina gravitacijskog područja Park & Ride lokacije, jer prije vrednovanja potencijalnih lokacija je potrebno napraviti selekciju i izostaviti one koje se ne mogu u razumnom roku staviti u funkciju ili teško svladavaju prostorna ograničenja. veličina gravitacijskog područja Park & Ride lokacije mogu se razvrstati na:

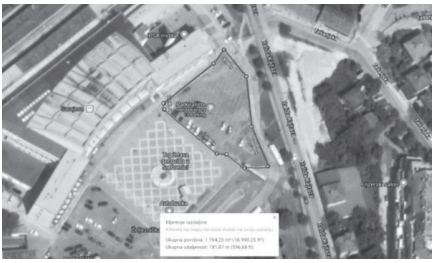
- obodne lokacije,
- prigradske lokacije, i
- udaljene ili vangradske lokacije.

MODEL PARK & RIDE SISTEMA U SARAJEVU

Za sistem Park & Ride u Sarajevu je u prvom koraku neophodno definisati i zonirati područja koja će činiti obodne lokacije parking prostora koji će sačinjavati okosnicu samog sistema. U ovom istraživanju su uzete u obzir sve potencijalne lokacije koje trenutno ispunjavaju kriterije za implementaciju Park & Ride modela. Na osnovu detaljnog istraživanja i uzimanja u obzir svih relevantnih parametara, iskristaliziralo se ukupno 8 lokacija za implementaciju Park & Ride modela. Kao prva lokacija se navodi djelimično iskorišteni parking koji se nalazi na lokaciji željezničke stanice u Sarajevu. Navedeni parking se sastoji od 2.568,31 (m^2). Prema autorima Davor Brčić i Marko Šoštarić (2012), od bruto površine za parking je potrebno svega 23 (m^2) za formiranje jednog parking mjesta. Na osnovu prethodno navedenog, dobijemo da je na našoj lokaciji 1 kod željezničke stanice u Sarajevu moguće izgraditi 111 parking mjesta (ukoliko posmatramo samo trenutnu lokaciju bez izgradnje dodatnih etaža) (slika 1). Kao druga lokacija se navodi djelimično iskorišteni parking koji se nalazi također na lokaciji željezničke stanice u Sarajevu. Navedeni parking se sastoji od 1.764,25 (m^2). Prema normativima za parking prostore od prethodno navedenih autora

Brčić i Šoštarić (2012), dobijemo da je na našoj lokaciji 2 kod željezničke stanice u Sarajevu moguće izgraditi 76 parking mjesta (slika 2). Kao i prethodna, i ova lokacija se može iskoristiti za izgradnju dodatnih etaža, i na taj način dobijemo vrijednost koja se multiplicira sa brojem etaža.

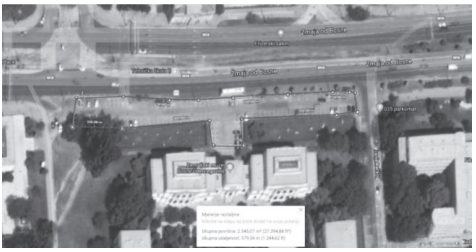
Slika 1. Lokacija 1 – Željeznička stanica Sarajevo



Slika 2. Lokacija 2 – Željeznička stanica Sarajevo

Kao treća lokacija se navodi nedovoljno iskorišteni parking koji se nalazi također na lokaciji kod UNITIC-a u Sarajevu. Navedeni parking se sastoji od 8.222,97 (m^2). Prema normativima za parking prostore od prethodno navedenih autora Brčić i Šoštarić (2012), dobijemo da je na našoj lokaciji 3 UNITIC-a u Sarajevu moguće izgraditi 357 parking mjesta (slika 3). Kao četvrta lokacija se navodi nedovoljno iskorišteni parking koji se nalazi na lokaciji kod Zemaljskog muzeja u Sarajevu. Navedeni parking se sastoji od 2.545,07 (m^2). Prema normativima za parking prostore od strane autora Brčić i Šoštarić (2012), dobijemo da je na lokaciji 4 kod Zemaljskog muzeja u Sarajevu moguće izgraditi 110 parking mjesta (slika 4).

Slika 3. Lokacija 3 – UNITIC



Slika 4. Lokacija 4 – Muzej

Kao peta lokacija se navodi djelimično iskorišteni parking koji se nalazi na lokaciji kod zgrade SCC-a u Sarajevu. Navedeni parking se sastoji od 8.812,49 (m^2). Prema normativima za parking prostore od strane autora Brčić i Šoštarić (2012), dobijemo da je na našoj lokaciji 5 kod zgrade Sarajevo City Centra u Sarajevu

moguće izgraditi 383 parking mjesta (slika 5). Kao šesta lokacija se navodi nedovoljno iskorišteni parking koji se također nalazi na lokaciji kod zgrade SCC-a u Sarajevu. Navedeni parking se sastoji od 6.989,58 (m^2). Prema normativima za parking prostore od strane autora Brčić i Šoštarić (2012), dobijemo da je na našoj lokaciji 6 kod zgrade SCC-a u Sarajevu moguće izgraditi 303 parking mjesta (slika 6).

Slika 5. Lokacija 5 – Sarajevo City Centar

Slika 6. Lokacija 6 – Sarajevo City Centar

Kao sedma lokacija se navodi dobro iskorišteni parking koji se nalazi na lokaciji Bistrika u Sarajevu. Navedeni parking se sastoji od 1.775,93 (m^2). Prema normativima za parking prostore od strane autora Brčić i Šoštarić (2012), dobijemo da je na našoj lokaciji 7 na Bistriku u Sarajevu moguće izgraditi 77 parking mjesta (slika 7). Kao osma lokacija se navodi dobro iskorišteni parking koji se nalazi na lokaciji kod Kuće inata u Sarajevu. Navedeni parking se sastoji od 1.475,67 (m^2). Prema normativima za parking prostore od strane autora Brčić i Šoštarić (2012), dobijemo da je na našoj lokaciji 8 kod Kuće inata u Sarajevu moguće izgraditi 64 parking mjesta (slika 8).

Slika 7. Lokacija 7 – Bistrik

Slika 8. Lokacija 8 – Inat kuća

Ukoliko sumiramo parking mjesta od 8 navedenih lokacija, dobijemo 1.481 parking mjesto koje bi u početnoj fazi bilo uključeno u projekat Park & Ride sistema. Bitno je napomenuti da su navedeni parkinzi već u upotrebi velikim dijelom. Radovi koji bi se morali uraditi, jesu uglavnom radovi farbanja parking mjesta. Izuzetak jeste samo lokacija kod UNITIC-a kod koje bi jedan dio zemljišta morao biti asfaltiran kao podloga. Također je neophodno skrenuti pažnju na

to da se u okolici užeg gradskog jezgra nalaze i brojni parkinzi unutar poslovnih objekata i površina koji bi se također mogli redefinisati i uključiti u projekat Park & Ride. Kod prethodno navedenih 8 lokacija za Park & Ride sistem je ključno to što se sve navedene lokacije nalaze u neposrednoj blizini autobuskih, trolejbuskih i tramvajskih stajališta. Specifične karakteristike planiranog Park & Ride koncepta za uže jezgro grada Sarajeva se nalaze u sljedećoj tabeli (tabela 2). Također, od posebne važnosti jeste to da se lokacija 1 i lokacija 2 nalaze u neposrednoj blizini željezničke stanice u Sarajevu, i iste bi imale kapacitet od 187 parking mjesta čija bi izgradnja trajala 6 mjeseci sa ukupnom investicijom od 29.800 KM. Na pomenutim lokacijama se već nalaze parking prostori koje bi samo trebalo preurediti i poboljšati njihovu trenutno namjenu. Lokacija 3 se nalazi u neposrednoj blizini UNITIC-a, i njen kapacitet nakon izgradnje bi bio ukupno 357 parking mjesta, dok bi kompletna izgradnja trajala 12 mjeseci sa ukupnom investicijom od 214.200 KM. Poređenja radi, sama lokacija 3 bi imala veći kapacitet od ukupnog broja parking lokacija u Ljubljani. Lokacija 4 je locirana kod Zemaljskog muzeja u Sarajevu i njen kapacitet nakon izgradnje bi bio ukupno 110 parking mjesta, dok bi kompletna izgradnja trajala 3 mjeseca sa ukupnom investicijom od 11.000 KM. Kod lokacije 3 se radi o već izgrađenom parking prostoru, koji se već uspješno koristi u implementaciju ciljeva mirujućeg saobraćaja. Lokacije 5 i 6 su locirane kod Sarajevo City Centra i njihov ukupni kapacitet nakon izgradnje bi bio ukupno 686 parking mjesta, dok bi kompletna izgradnja trajala 6 mjeseci sa ukupnom investicijom od 102.900 KM. Kod lokacija 5 i 6 se također radi o već izgrađenom parking prostoru, koji se već uspješno koristi u implementaciju ciljeva mirujućeg saobraćaja. Lokacije 7 i 8 su locirane na Bistriku i kod Kuće inata i njihov ukupni kapacitet nakon izgradnje bi bio ukupno 141 parking mjesto, dok bi kompletna izgradnja trajala 3 mjeseca sa ukupnom investicijom od 7.050 KM. Kod lokacija 7 i 8 se također radi o već izgrađenom parking prostoru, koji se već uspješno koristi u implementaciju ciljeva mirujućeg saobraćaja. Iz svega prethodno navedenog možemo slobodno zaključiti da bi se koncept Park & Ride mogao vrlo jednostavno implementirati u glavnom gradu Bosne i Hercegovine, sa minimalnim troškovima. Razlog navedenog je prvenstveno korištenje od oko 80% parking kapaciteta koji su već u trenutnoj upotrebi i pod upravom grada Sarajeva.

Tabela 2. Specifične karakteristike planiranog Park & Ride sistema

Lokacija	Planirani broj parking mjesta	(KM/parking mjestu)	Ukupno (KM)	Vrijeme izgradnje u mjesecima
Lokacija 1	111	200	22.200	6
Lokacija 2	76	100	7.600	6
Lokacija 3	357	600	214.200	12
Lokacija 4	110	100	11.000	3
Lokacija 5	383	150	57.450	6
Lokacija 6	303	150	45.450	6
Lokacija 7	77	50	3.850	3
Lokacija 8	64	50	3.200	3
UKUPNO	**1.481**	**1.400**	**364.950**	**-**

Izvor: Istraživanje provedeno od strane autora

Ukratko možemo zaključiti sljedeće; za 1.481 parking mjesto je neophodna investicija od oko 364.950 (KM). Izgradnja bi trajala maksimalno 12 mjeseci, odnosno godinu dana. Ukoliko uzmemo u obzir da grad Sarajevo ima 275.524 stanovnika i broj parkinga koji bi bili sastavni dio Park & Ride koncepta podijelimo sa jediničnom vrijednošću od 1.000 stanovnika, dobijemo da bi grad Sarajevo na 1.000 stanovnika imao više od 5 parking mjesta koji bi bili sastavni dio "pametnog koncepta".

Opravdanost uvođenja Park & Ride sistema se može također uvidjeti kroz ključne lokacije koje se nalaze na ulazu i izlazu iz užeg gradskog jezgra. Dionicu prema Trgu Austrije u ovom slučaju nećemo direktno posmatrati, jer nema direktni impakt na planirani projekat Park & Ride sistema. Dakle, za nas je najbitniji PGDS na glavnoj gradskoj arteriji u Sarajevu, jer on čini oko 90 % vozila. Vozila koja nisu rezidenti, i koja uđu u gradsko jezgro prema Trgu Austrije će biti primorana platiti ulazak u jezgro grada, koji će se evidentirati preko postavljenih senzora i kamera koji skeniraju tablice vozila. Prema podacima sa automatskih brojača saobraćaja možemo uvidjeti da se tokom godine prema gradskom jezgru kreće 29.822 vozila PGDS-a[4]. Uvođenjem Park & Ride sistema bi se smanjila gužva na gradskim ulicama kao i reduciralo ukupno zagađenje uzrokovano ispušnim plinovima iz vozila. Na osnovu pomenutih automatskih brojača sao-

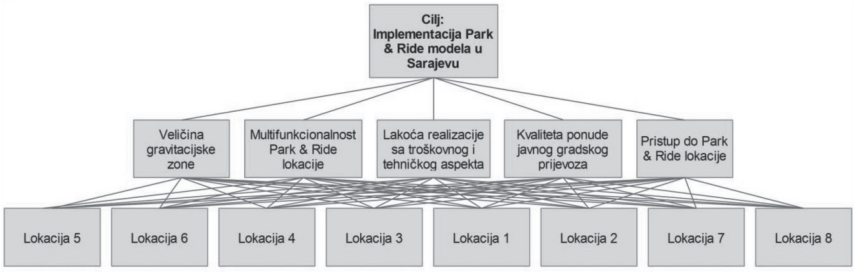
[4] Direkcija za puteve Kantona Sarajevo (2016). Brojanje saobraćaja na postojećoj primarnoj gradskoj i regionalnoj mreži saobraćajnica u nadležnosti Direkcije za puteve Kantona Sarajevo u 2015. godini Sarajevo: NTSI – INSTITUT d.o.o. Sarajevo.

braćaja najopterećenije dnevno vrijeme jeste u periodu oko 12:00 sati. Prosječan godišnji dnevni saobraćaj za dionicu od Vječne vatre ka Predsjedništvu Bosne i Hercegovine iznosi 32.877 vozila. Ovo je značajan podatak koji nam ustvari ukazuje na razliku broja vozila koja ulaze u uže gradsko jezgro i koja izlaze iz užeg gradskog jezgra i koja iznosi 3.055 vozila. To nam ukazuje na to da 3.055 vozila samo tranzitiraju kroz grad, odnosno nepotrebno stvaraju nepotrebne gužve na Sarajevskim ulicama užeg gradskog jezgra. Ukupni satni saobraćaj tokom dana iznosi oko 2.000 vozila po danu. Ovaj podatak nam je od izuzetne važnosti, jer sami kapaciteti našeg prijedloga za Park & Ride sistem nam navode da je bez posebnih infrastrukturnih zahvata moguće izvesti 1.481 parking mjesto. Ukoliko se uključi zabrana saobraćanja vozilima kroz gradsko jezgro, ili dozvoli saobraćanje uz prethodnu naplatu, zagušenja i nepotrebna vozila u gradskom jezgru se mogu reducirati za minimalnih 25 %. U ovu vrijednost ubrajamo i vozila koja tranzitiraju kroz grad, vozila koja „rekreativno“ kruže gradom, kao i vozila koja se uključuju iz sporednih ulica iz pravca Vijećnice prema predsjedništvu Bosne i Hercegovine. Prema podacima sa automatskih brojača saobraćaja, od 200 vršnih sati po danima u sedmici možemo uočiti jednu „nepravilnost“ koja se odnosi na vozila koja saobraćaju gradom svakog petka tokom godine. Ovakva disproporcija je rezultanta vozila koja rekreativno dolaze u gradsko jezgro radi vikenda i izlazaka u grad vozilom, kao i vozila koja izlaze iz grada, jer veliki broj radno sposobnog stanovništva u Sarajevu u stvarnosti potiče iz okolnih mjesta ili čak iz okolnih regija. Pa kako se vikend približava, navedena vozila napuštaju gradsko jezgro sa namjerom odlaska u rodno mjesto. Od dvije navedene komponente, definitivno možemo zaključiti da je glavna komponenta ona koja se odnosi na napuštanje grada.

MULTIKRITERIJSKO VREDNOVANJE PARK & RIDE MODELA PRIMJENOM METODE AHP

U prethodno izloženim poglavljima smo trasirali elemente i pravce dijelovanja sa ciljem implementacije Park & Ride modela. Pri tom se je moralo obratiti dosta pažnje na niz kriterija koji ukazuju na potrebu jednog ovakvog koncepta u glavnom gradu Bosne i Hercegovine. Prilikom vrednovanja kriterija se koristila metoda AHP u kojoj smo vrednovali 8 predloženih lokacija za implementaciju Park & Ride modela. Predložene lokacije su vrednovane na osnovu Saatyeve skale po autoru Thomas L. Saaty (2003), sa ocjenama od 1 kao jednako važno do 9 kao ekstremno važno. Parni brojevi predstavljaju međuvrijednosti. Autor je prilikom vrednovanja koristio veći raspon ocjena radi preciznijih vrijednosti za svaku lokaciju ponaosob. Ovakav pristup je pokazao da neke lokacije zaslužuju veću pažnju od drugih. Nije

iznenađujuće da su lokacije 5 i 6 dobile najveće ocjene iz razloga blizine Sarajevo City Centra, vladinih institucija i tramvajskih terminala. Nakon toga, a na osnovu Saatyeve skale je visoko ocijenjen parking kod Muzeja, odnosno lokacija 4, koju također krasi blizina Sarajevo City Centra, vladinih institucija, tramvajskih terminala. Pored toga, navedena parking lokacija ima prednost i blizine Historijskog i Zemaljskog muzeja, kao i autobuskog terminala. Simptomatično je poređenje između lokacija 5 i 6, i između lokacije 4. Iako lokacija 4 ima više ključnih tačaka u svojoj neposrednoj blizini, dobila je manje ocjene od lokacija 5 i 6. Razlog toga isključivo leži u neposrednoj blizini Sarajevo City Centra koji je od lokacije 5 i 6 udaljen svega 20-tak metara. Malo manje ocjene prilikom vrednovanja uz pomoć AHP metode je dobila lokacija 3 koja se nalazi u blizini UNITIC-a. Razlog manjih ocjena lokacije 3 u odnosu na lokaciju 4,5 i 6 jeste prvenstveno taj što je lokacija 3 malo više udaljena od Sarajevo City Centra, vladinih institucija, tramvajskih terminala, kao i to što je prilaz iz pravca Ilidže malo otežan. Lokacije 1 i 2 su dobile solidne ocjene iz razloga blizine željezničke i autobuske stanice, a zbog veće udaljenosti Sarajevo City Centra i vladinih institucija. Lokacije 7 i 8 su dobile najmanje ocjene iz razloga što se one nalaze na istočnoj strani ulaza u grad, jer ukoliko se krećete iz pravca Ilidže, morate proći kompletan grad da dođete do predmetnih lokacija, što bi značilo i eventualnu naplatu ulaska u uže gradsko jezgro. Ukoliko se krećete iz pravca Goražda, pomenuti parkinzi Vam se nalaze na suprotnoj strani u odnosu na Vaš pravac kretanja (slika 9). Odluka o primjeni AHP metode bila je dijelom temeljena na nekim njenim prednostima u odnosu na druge višekriterijske metode koje zastupaju autori kao što je Ramanathan Ramakrishnan (2001). Metodu AHP krasi: rasprostranjenost, dostupnost softvera, mogućnost provjere konzistentnosti, te razumljivost za donositelje odluka. Na žalost Grad Sarajevo trenutno ne daje ni deklarativno podršku Park & Ride modelu, bez objektivnog razmatranja prednosti i slabosti, potreba i ograničenja. No, u nekim situacijama se Park & Ride model spominjao kao najbolje rješenje za probleme gradskog saobraćaja.



Slika 9. AHP model prioriteta izgradnje Park & Ride lokacija u Sarajevu

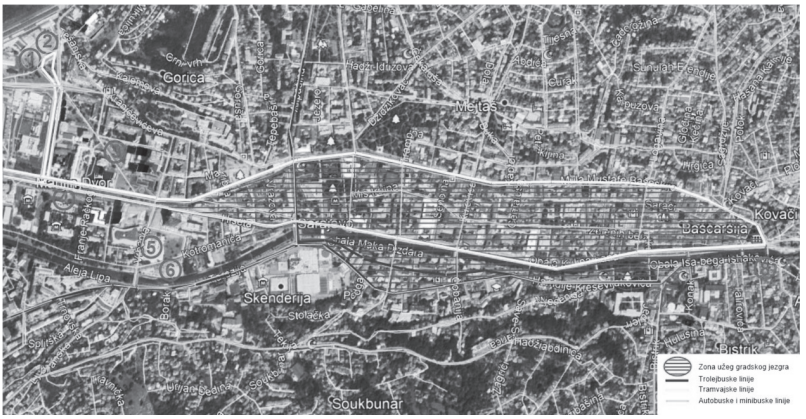
Krasić i Lanović (2013) tvrde da kod donošenja odluka na temelju višekriterijske analize, sa ciljem postizanja veće konzistentnosti, poželjno je imati razuman broj elemenata za usporedbu, jer ljudski mozak ima limite u percepciji i nije u stanju konzistentno zaključivati ako uspoređuje velik broj elemenata. Prethodno pomenuti autori tvrde da i s druge strane gledišta više elemenata daje bolju validnost jer zaključujemo na temelju većeg broja podataka. Saaty (2003) tvrdi da zahtjevi konzistentnosti i validnosti su kod multikriterijske analize suprotstavljeni, pa je pomoću matematičkih analiza za AHP metodu dokazano da je optimalan broj elemenata koji se analiziraju sedam. Ovo pravilo vrijedi za *pairwise comparison*, što je jedan od načina mjerenja i uspoređivanja kako kriterija tako i alternativa u metodi AHP. Struktura AHP modela koji je primijenjen na potencijalne Park & Ride lokacije u gradu Sarajevu prikazana je na prethodnoj slici 9. Cilj ovog rada je bio odrediti prioritete izgradnje za 8 potencijalnih Park & Ride lokacija, uzimajući u obzir pet kriterija opisanih u poglavlju 3. Prethodno ispitivanje u mnogo čemu je olakšalo međusobno težinsko vrednovanje kriterija po njihovoj važnosti. AHP metoda prema Saatyevoj skali omogućuje veliki raspon odnosa: od 1 – jednako važno do 9 - ekstremno važnije. Težinski odnosi između kriterija, koji su prikazani u tabeli 3 funkcionišu tako da se svakom kriteriju daju ocjene za svaku lokaciju zasebno u odnosu na neki određeni/zamišljeni standard, odnosno referentnu vrijednost.

Tabela 3. Težinski odnosi između kriterija

KRITERIJI	Veličina gravitacijske zone	Kvaliteta ponude javnog gradskog prijevoza	Multifunkcionalnost Park & Ride lokacije	Lakoća realizacije sa troškovnog i tehničkog aspekta	Pristup do Park & Ride lokacije
Veličina gravitacijske zone		1	2	5	7
Kvaliteta ponude javnog gradskog prijevoza			3	3	4
Multifunkcionalnost Park & Ride lokacije				4	5
Lakoća realizacije sa troškovnog i tehničkog aspekta					7
Pristup do Park & Ride lokacije					

Na osnovu međusobnog vrednovanja predloženih lokacija za implementaciju Park & Ride modela, po pojedinom kriteriju urađen je kompletan težinski raspon, koji pokazuje da kod navedenih kriterija najveću važnost ima veličina gra-

vitacijske zone, a najmanju pristup do Park & Ride lokacije. Kvaliteta ponude javnog gradskog prijevoza je zauzela visoko drugo mjesto po važnosti. Budući da Sarajevo nema izgrađen Park & Ride sistem, logično je bilo očekivati da će "globalni" kriterij imati najveći utjecaj dok će "lokalni" kriterij imati najmanju važnost. Posebno zanimljivo je usporediti kriterije kvaliteta ponude javnog gradskog prijevoza i multifunkcionalnosti Park & Ride lokacije. Pošto je kvaliteta ponude javnog gradskog prijevoza egzistencijalni faktor kod uvođenja Park & Ride sistema, u slučaju Sarajeva se to pokazalo važnijim od multifunkcionalnosti Park & Ride lokacije, što je bilo i očekivano. Lakoća realizacije sa troškovnog i tehničkog aspekta je zauzela čevtrto mjesto iz razloga pošto se radi o lokacijama koje se već oko 90 % sopstvene površine već koriste kao parking prostori. Finalni rezultati provedene AHP analize lokacija za izradu Park & Ride modela su prikazani na slici 10.



Slika 10. Predložene lokacije za izradu Park & Ride modela u Sarajevu

Zona užeg gradskog jezgra se prostire na 598.347,56 (m^2). Dužina granica zone iznosi 4,75 (km). Na sjeveru, zonom je obuhvaćeno područje starog dijela grada o Vijećnice, preko Sebilja, i proteže se Titovom ulicom do Marijin dvora. Na zapadu, granica zone prolazi pored BBI centra na Marijinom dvoru, i pored Skenderije. Sa južne strane, zona je omeđena ulicom Hamdije Kreševljakovića do Trga Austrije, dok je na istoku glavna granica kod Sarajevske Vijećnice. Na prethodnoj slici, prikazan je položaj potencijalnih Park & Ride lokacija na mreži javnog gradskog prijevoza kantona Sarajevo, pri čemu su brojevi prikazani hronološkim redoslijedom. Rezultati prioriteta izgradnje u slučaju grada Sarajeva predstavljaju spoj očekivanih ishoda. Kao najbolje moguće lokacije su se iskristlizirale tri lokacije, od kojih se lokacije 5 i 6 nalaze u neposrednoj blizini Sarajevo City Centra, dok se lokacija 4 nalazi direktno ispred Zemaljskog muzeja u Sarajevu. Naime,

pomenuta parkirališta imaju visok stepen popunjenosti tokom dana zbog blizine tramvajskog i autobuskog stajališta, vladinih institucija, kao i SCC-a. U potpunosti su potvrđene vrijednosti predloženih lokacija. Lokacija 3 kod UNITIC-a je također dobila dobre ocjene prilikom vrednovanja, dok su lokacije 1 i 2 dobile solidne ocjene. Najmanje ocjene su dobile dvije lokacije koje se nalaze u gradu zbog otežanog pristupa istim. Potencijalne Park & Ride lokacije u Sarajevu predstavljaju trenutno jedan tip objekata; parkiralište u nivou. Poznavanje potreba svake lokacije i svih ostalih elemenata za implementaciju sistema, omogućava procjenu ukupne investicije. Dostupni podaci i iskustva su omogućili vjerodostojnu procjenu vremena izgradnje svake Park & Ride lokacije, kao i cijelog Park & Ride modela. Upravo je zbog male cijene kompletnog Park & Ride sistema od oko 364.950 KM izvediv idejni projekat, koji uglavnom zahtjeva minimalna ulaganja za opremanje već izgrađenih lokacija.

ZAKLJUČAK

Saobraćajno inžinjerstvo je takva oblast da u sebi sadrži brojne komplikovane postupke koji uglavnom zahtjevaju korištenje višekriterjumskog vrednovanja i odlučivanja. Planiranje implementacije Park & Ride modela jeste takav primjer. U ovom radu se došlo do zaključka potrebe izgradnje Park & Ride modela u Sarajevu, i to je potvrđeno uz višekriterijsko vrednovanje koje je uključivalo veličinu gravitacijske zone kao glavni kriterij, impozantnu visoko kvalitetnu ponudu javnog gradskog prijevoza, solidnu multifunkcionalnost Park & Ride lokacije, jednostavnost i lakoću realizacije Park & Ride modela sa troškovnog i tehničkog aspekta i neizostavni pristup do Park & Ride lokacije. Provedeno istraživanje je ukazalo na određene specifičnosti koje će imati veliki utjecaj na imlementaciju Pak & Ride koncepta u Sarajevu. Jedna od njih jeste upravo veličina gravitacijske zone koju određuje gustina saobraćaja, protok, broj stanovništva i razvijenost saobraćajne infrastrukture. Na predloženih 8 lokacija za Park & Ride model, prikazana je razlika koju stvaraju različiti tipovi urbaniziranosti u pogledu veličine gravitacijskog područja i kvalitetne ponude javnog gradskog prijevoza. Područja sa posebno izraženom gustinom stanovanja privlače rezidente kojima je ishodište putovanja ustvari i mjesto stanovanja, i koje se nalazi u neposrednoj blizini Park & Ride objekata. Logikom stvari, područja sa perifernih dijelova grada Sarajeva generiraju putovanja do Park & Ride objekata. Autor ovog rada je poseban akcent stavio na kvalitetnu ponudu javnog gradskog prijevoza i multifunkcionalnost Park & Ride lokacije koji su zauzeli vrlo visoke pozicije u samom procesu istraživanja na primjeru grada Sarajeva. Multifunkcionalnost Park & Ride objekta doprinosi povećanju racionalnosti njegova korištenja, odnosno povećava

opravdanost finansijskih ulaganja. U kriteriju multifunkcionalnosti smo se trudili da ispitamo lokacije koje služe za transfer putnika od raznih tipova motornih vozila da sredstava javnog gradskog prijevoza, i to ne samo subotom i nedjeljom nego i velikim dijelom radnih dana. U ovom je radu, uz pomoć metode višekriterijskog vrednovanja AHP, pokazano kako je primjena AHP metode omogućila provjeru konzistentnosti zaključivanja prilikom sudjelovanja u postupku određivanja važnosti kriterija i rangiranja potencijalnih Park & Ride lokacija. Također, ispitano je nekoliko mogućih scenarija realizacije Park & Ride sistema, kako u pogledu potrebnih sredstava tako i u pogledu očekivanih učinaka. Na taj se način znatno smanjuje mogućnost donošenja pogrešnih investicijskih odluka temeljenih isključivo na načelu izbora najjeftinije opcije. Prilikom istraživanja su se uočile sljedeće nepobitne činjenice:

- Sarajevo uopšte nema implementiran Park & Ride sistem, koji bi u na više načina doveo do rasterećenja saobraćaja;
- Ukoliko se uzme u obzir broj stanovnika, Sarajevo bi imalo više parking mjesta na Park & Ride lokacijama nego Ljubljana i Amsterdam;
- Ukoliko se uzme u obzir jedinični odnos broja parking mjesta i vrijednosti od 1.000 stanovnika, Sarajevo bi procentualno imalo više parking mjesta od Amsterdama, Budimpešte, Berlina, Ljubljane, Stocholma, Beča, Pariza, Praga, a manje od Ženeve i Luksemburga;
- Građani glavnog grada Bosne i Hercegovine mnogo više koriste putničke automobile nego što je to potrebno, odnosno koriste putničke automobile i za savladavanje najmanjih udaljenosti;
- Građani glavnog grada Bosne i Hercegovine izuzetno malo koriste sredstva javnog gradskog prijevoza; i
- Neadekvatna rješenja za mirujući saobraćaj;

Prilikom analize trenutnog saobraćajnog opterećenja, došlo se i do zaključka da u Sarajevu postoji nekoliko prioritetnih ciljeva koje je potrebno ostvariti, a koji se direktno tiču saobraćaja:

- Izrada detaljne strategije razvoja saobraćajnog sistema kantona Sarajevo;
- Uvođenje Park & Ride sistema na obodnim mjestima prije ulaska u uže gradsko jezgro;
- Zaštititi okoliš smanjenjem emisije štetnih plinova iz pokretnih zagađivača;
- Povećanje kvalitete zraka užoj gradskoj zoni za 15 % uz pomoć Park&Ride sistema;
- Smanjiti zagušenja saobraćajnog sistema koja se svakodnevno pojavljuju na mreži saobraćajnica u vršnim, ali i ostalim satima uz pomoć Park&Ride sistema;

- Unapređenje sistema javnog gradskog prijevoza; i
- Aktivno vođenje kampanja sa sredstvima javnog informisanja, sa ciljem podizanja svijesti i aktivnijeg učešća u korištenju sredstava javnog gradskog saobraćaja;

Smatramo da ovo istraživanje predstavlja dobre temelje budućim planerima strateške sobraćajne politike glavnog grada Bosne i Hercegovine.

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IMPLEMENTATION OF A PARK & RIDE SYSTEM IN SARAJEVO

Džemal Cinac, Mr. sc.

Abstract: *Sarajevo is the capital city of Bosnia and Herzegovina and represents the largest urban, cultural, economic and transport center, with seven major roads connected to other parts of the country. A large number of cities in the world have a problem with parking requirements, and Sarajevo is not an exception. Because of that, there is a need for reducing traffic flows in the nearest city center by using "smart solutions" that advocate vignettes or other billing for entry into the city center, such as the Park & Ride Concept, with with the aim of reducing pollution and environmental pollution. The Park & Ride system is a highly functional way of reducing the number of vehicles coming to a larger city, and it works by getting public transport terminals closer to each other, rebuilding or building a new parking lot where drivers park their passenger cars and continue the route with public transport to the very center of the city. Since Park & Ride facilities are expensive and spend fairly precious city land, so their planning and construction needs to be accessed extremely thoroughly and rationally. It is extremely important to have a set of criteria according to which investment decisions will be made, which does not mean that their number in advance guarantees a successful planning process. Traffic system analysis in Sarajevo is based on the analysis of the load and number of passenger cars, an analysis of the number of public parking lots in the city center and the possibility of implementing the Park & Ride system. According to data from automatic traffic counters, there are 29,822 AADT vehicles wich enter the city center and 32,877 AADT vehicles of wich leaving the city. There are frequent queues that last for 2-3 semaphore cycles on the stock, which represents the need of building innovative solutions that make up a part of every concept of "Smart Cities". In this paper, AHP method has been applied which provides a good basis for multi-criteria evaluation and ranking of future Park & Ride facilities. The AHP method is also suitable for use in cases where pure economic criteria may not be sufficient to make final decisions. This paper is based on the critical analysis of previous experience and the research carried out by the author, and it defines the main criteria that need to be applied in the planning of Park & Ride facilities development. Eight locationst are detected at the very entrance to the nearest city center of Sarajevo, which are directly linked to the public transport infrastructure, which would be ideal for implementing the Park & Ride concept.*

Keywords: *Smart Cities, P & R System, AADT.*

JEL classification: *R41, R42, Q55*

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ORIGINALNI NAUČNI RAD / ORIGINAL SCIENTIFIC PAPER

UTICAJ STRUKTURE KAPITALA NA VRIJEDNOST AMERIČKIH I SRPSKIH FIRMI

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Sažetak: *Prema teoremi Modigliani-Miller, vrijednost kompanije ne zavisi od strukture kapitala (odnos duga prema kapitalu). Provjerili smo teoremu na dva finansijska tržišta, jednom globalnom i jednom regionalnom. U istraživanju smo koristili višestruki linearni regresioni model, panel model i VAR. Teorema nije izdržala empirijsku provjeru na finansijskim tržištima Sjedinjenih Američkih Država i Republike Srpske. Vrijednost američkih i srpskih firmi nije indiferentna na kretanje u strukturi kapitala. Rast duga u odnosu na kapital u SAD i Republici Srpskoj smanjuje vrijednost firmi, tj. vrijednost PE racia. Inverzni odnos između strukture kapitala i vrednosti kapitala je ekonomski logičan i očekivan, jer rast zaduženosti povećava rizik likvidnosti i solventnosti. Rast zaduženosti utiče na smanjenje tražnje za akcijama kompanija i smanjenje vrijednosti firme, odnosno smanjenje PE racia.*

Ključne riječi: *struktura kapitala, odnos cijene i zarade po akciji, vrijednost firme, S&P500.*

JEL klasifikacija: *G32, G12.*

UVOD

U tržišnoj privredi promet se ne odvija samo na tržištu roba i usluga, već i na finansijskom tržištu. Jedan od najbitnijih segmenata svakog finansijskog tržišta je tržište akcija. Od vrijednosti akcija zavisi vrijednost firma, a vrijednost tj. cijena akcija je determinisana mnoštvom faktora. Teorija kapitala dovodi u vezu vrijednost firme sa strukturom kapitala firme tj. sa strukturom pasive kojom se finansiraju poslovne aktivnosti. Kapital firme ima dva osnovna oblika: dug ili dužnički kapital (eng. debt equity) i akcijski kapital (eng. equity capital). Ekonomsko-finansijska teorije se u pogledu određivanja optimalne strukture kapitala nije izjašnjavala sve do 1958. godine kada su Modigliani i Miller ustanovili teo-

[1] Izraženi stavovi, ideje i mišljenja su autorovi i ne predstavljaju stavove institucije u kojoj je zaposlen.

remu (*MM* teorema) o irelevantnosti strukture kapitala na vrijednost firme [Van Horne, 1971: 207]. Teorema se svodi na stav da vrijednost firme ne zavisi niti od politike isplate dividendi niti od načina finansiranja firme. Po *MM* teoremi sa stanovišta vrijednosti firme nebitno je da li se firma finansira kroz zaduživanje, ili emisijom akcija, pa zato njenom sadržaju savršeno pristaje odrednica "princip irelevantnosti kapitalne strukture" (eng. capital structure irrelevance principle). *MM* teorema se zasniva na restriktivnim pretpostavkama o nepostojanju transakcionih troškova i troškova bankrota, kao i na pretpostavci o efikasnom tržištu koje podrazumjeva odsustvo agencijskih troškova i asimetričnih informacija. Sa obzirom da prisustvo poreza utiče na rast vrijednosti firmi koje imaju više duga u strukturi kapitala, jer rast troškova kapitala smanjuje poresku osnovicu, u razvoj *MM* teoreme uključeno je i nepostojanje poreza kao još jedne, vrlo restriktivne, pretpostavke. Pored *MM* teoreme, razvijene su teorija pogodbe (eng. the trade-off theory), teorija statične pogodbe, (eng. the static trade-off theory), teorija dinamičke pogodbe (eng. the dynamic trade-off theory), teorija hijerarhije (eng. the pecking order theory) i teorija tržišnog tempiranja (eng. the market timing theory). Sve ove teorije odbaciju, eksplicitno ili implicitno, tezu o nepostojanju uticaja strukture kapitala na vrijednost firme. Drugim riječima, prema ovima teorijama, optimalna struktura kapitala sa aspekta vrijednosti firme nije fikcija.

Iako se se nakon *MM* teoreme razvijene i druge, potpuno različite, teorije kapitala, teorija Modgilania i Millera je i dalje centralna i najintigrantnija teorija kapitala. Cilj ovoga istraživanja je da odgovor na pitanje da li između vrednovanja američkih (Sjedinjene američke države - SAD) i srpskih (Republika Srpska) firmi sa aspekta strukture kapitala postoji razlika. Naša pretpostavka je da u nesavršenom svijetu tržišne privrede i finansijskih tržišta prepunih frikcija i anomalija struktura kapitala mora biti jedna od determinati vrijednosti firme. To važi kako za američke, tako i za srpske firme iako je američko tržište značajno efikasnije od srpskog. Naša hipoteza je da u neeksperimentalnim tj. tržišnim uslovima, koji isključuju pretpostavke na kojima se *MM* teorema zasniva, struktura kapitala mora uticati na vrijednost firme.

U istraživanju polazimo od literarnog pregled vezanog za odnos vrijednosti firme (koju aproksimiramo kroz *PE* racio) i strukture kapitala. Potom dajemo kratak prikaz metodologije istraživanja, nakon čega slijede glavni rezultati istraživanja, zaključna razmatranja i pregled referenci.

LITERARNI PREGLED

Mnogi autori su se bavili istraživanjem determinanti *PE* racia. Međutim neki od njih Loughlin (1996), Reilly et al. (1983), Kane et al (1996) nisu u specifikaciji modela koristili varijablu struktura kapitala, na bilo koji način. Sa druge strane brojni autori su za određivanje determinanti *PE* racia koristili varijablu struktura kapitala u formi leveridža (dug/aktiva). Zaključci svih ovih istraživanja (Ramcharran (2002), Jones (2000) Beaver i Morse (1978)) su da rast leveridža tj. rast duga u odnosu na aktivu, doprinosi smanjenju *PE* racia firme. Jedno referentno istraživanje, Afza i Tahir (2012), na primjeru pakistanske hemijske industrije je u specifikaciji koja uz *PE* racia (kao zavisno promjenljivu) obuhvatilo racio isplate dividende, Tobinovo *Q* (odnos tržišne i knjigovodstvene vrijednosti imovine), leveridž (ukupni dug/ukupna aktiva), tržišni povrat (odnos zbira dividende i razlike u cijeni na kraju i na početku godine sa jedne starane i cijene na početku godine sa druge strane), varijabilitet u tržišnoj cijeni, rast zarada (procentualna promjena u neto prihodu) i veličini firme (prirodni logaritam prodaje) , je pokazalo jak inverzan uticaj strukture kapitala, tj. leveridža na *PE* racio tj. vrijednost firme. U panel analizi koeficjent uz regresor leveridž je - 2,82, a rezultati za leveridž po godinama su takođe signifikantni sa negativnim predznakom [Afza i Tahir, 2012: 340].

METODOLOŠKE OSNOVE ISTRAŽIVANJA

Istraživanje se sastoji iz dva dijela. U prvom dijelu smo vršili analizu odnosa strukture kapitala i vrijednosti firme na američkom tržištu, a u drugom na srpskom tržištu (Republika Srpska). Strukturu kapitala smo u cijelom istraživanju definisali kao odnos duga i kapitala (u %). Aproksimacija vrijednosti firme na američkom tržištu je *PE* racio za *S&P500* (vidjeti popis skraćenica u Tabeli 3), vodeći svjetski indeks tržišta akcija. *VAR* model (vektorautoregresija) se sastoji od sljedećih varijabli: *PE* racio *(SAD), CPI*(*SAD*), *BDP (SAD)*, kamatna stopa (eng. *Fed Fund Rate*) i struktura kapitala(SAD), sa godišnjom frekvencijom. Sve serije (osim *BDP* u *VAR2*) su diferencirane (oznaka *d* uz varijablu), da bi se osigurao uslov stacionarnosti.

U oba konstruisana *VAR* modela (*VAR1* i *VAR2*) sve varijable su endogene. Redosljed u varijablama je *dPE dBDP(-1) dFFR dCPI dDK* za *VAR1*, odnosno *dPE BDP(-1) dFFR dCPI dDK* za *VAR2*. Za identifikaciju strukturnog šoka koristili smo koleski dekompoziciju.

VAR1 je bez restrikcija u parametrima, a to znači da svaka varijabla utiče na sve varijable. U *VAR2* smo uveli restrikcije u parametrima i pretpostavili smo da ni

PE racio ni *DK* ne mogu uticati na *FFR, BDP, CPI*, a da ove tri varijable ostvaruju međusobne uticaje, kao i da mogu uticati jedna na drugu, kao i na preostale dvije varijable (*PE, DK*). Broj lagova za sve varijable je 3, osim za *BDP* za koji je četiri. Frekvencija podataka je kvartalna, a uzorak obuhvata period Q1/2004 – Q1/2017.godine.

Na bazi *VAR* modela konstruisane su funkcije odgovora na impuls tj. na šok (*IRF*). Šok je u istraživanju uvijek pozitivan, tj. predstavlja rast u varijabli od jedne standardne devijacije u odnosu na trendnu vrijednost. Znak i signifikantnost šoka mjerimo nekoliko kvartala nakon šoka.

U svrhu dokazivanja uticaja, ili odsustva uticaja, strukture kapitala na vrijednost srpskih firmi koristili smo višestruki regresioni model i panel analizu. U višestrukom regresionom modelu sve varijable se odnose na Telekom Srpske a.d. Banjaluka (*TLKM*). Specifikacija regresionog modela pored *PE* racia i *DK* obuhvata i stopu rasta prihoda i povrat na akcije, sa godišnjom frekvencijom podataka. Povrat na akcije je definisan kao količnik razlike u cijeni akcije na kraju godine i cijenu akcije na početku godine uvećene za dividendu sa jedne strane i cijene akcije na početku godine sa druge strane. U panel modele smo uključili i kamatne stope (dvanaestomjesečni *EURIBOR*) i vještačku varijablu za balon na srpskom tržištu akcija, koja ima vrijednost 1 do 2007. godine, a nakon toga nula. Panel analiza obuhvata pored *TLKM*, preduzeća *BVRU* i *BOKS* (Banja Vrućica a.d. Teslić, Boksiti a.d. Milići). Uzorak za domaće finansijsko tržište je godišnje frekvencije i obuhvata period 2005 – 2016. godine. Koristili smo podatke iz zbirnih finansijskih izvještaja koje objavljuje Banjalučka banka a.d. Banjaluka (BLSE).

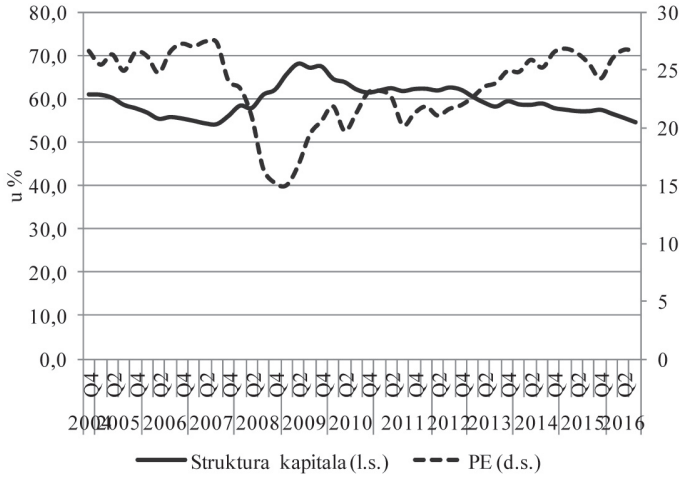
Tabela 3. Popis skraćenica

Pun naziv	**Skraćenica**	**Način izračunavanja**	**Engleska skraćenica**
Odnos/racio cijene i zarade	*PE*	cijena po akciji/ zarada po akciji	PE
struktura kapitala, odnos duga i kapitala	*DK*	(dug/kapital)*100	*Capital structure*
vektor autoregresija	*VAR*	-	*VAR*
kamatna stopa na sredstva federalnih rezervi (*SAD*)	*FFR*	-	*FED Fund Rate*
indeks potrošačkih cijena (*SAD*)	*CPI*	-	*CPI*
bruto domaći proizvod (*SAD*)	*BDP*	-	*GDP*

prva razlika (ispred naziva varijable)	*d*	-	*d*
funkcija odgovora na impuls	*IRF*	-	*IRF*
Durbin-Votsonova statistika	*DV*	-	-

REZULTATI I DISKUSIJA

Između kretanje *PE* racia za *S&P500* i strukture kapitala (odnos duga i kapitala) američke privrede postoji izuzetno visok stepen međuzavisnosti (Grafikon 7). To otkriva čak i obična vizuelna analiza. Periodi rasta *PE* su povezani sa periodima pada u strukturi vrijednosti kapitala. Numerički izraz ove veze, mjeren Pearsonovim koeficijentom korelacije, je -0,78 što predstavlja jaku korelacionu vezu.



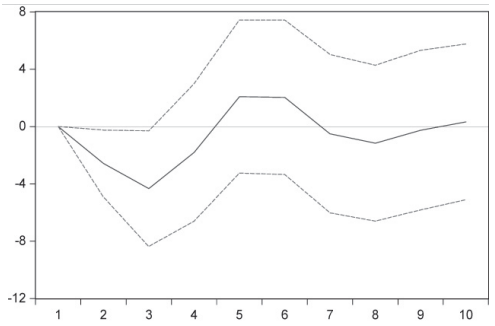
Grafikon 7. *PE* racio za *S&P500* i struktura kapitala američke privrede, 12/2004 – 09/2016. godine

Izvor: Analiza autora. http://www.multpl.com/table?f=m (pristupljeno 03.03.2018.)

https://fred.stlouisfed.org/series/TOTDTEUSQ163N (pristupljeno 03.03.2018.)

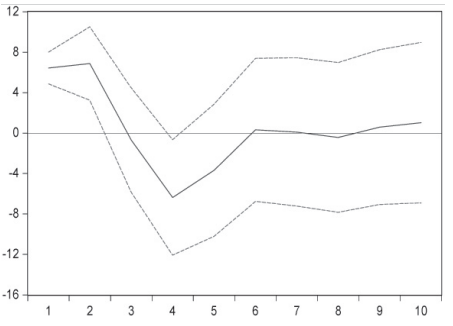
Na grafikonima (od 8 do 12) je prikazana funkcija odgovora na impuls (*IRF*) kreirana na osnovu modela *VAR1,* za interval pouzdanosti od 95%. Znak svih *IRF* je očekivan (Tabela 4) osim za uticaj *BDP* na vrijednost preduzeća (Grafikon 12). Šok u strukturi kapitala (*dDK*) obara vrijednost preduzeća i signifikantan je do trećeg kvartala. Treći kvartal poslije šoka u strukturi kapitala vrijednost preduzeća (tj. *dDK*) je manja za 8%. Šok u kamatnim stopama i cijenama obara vrijednost firmi. Autošok (*PE*) povećava vrijednost firme, dok šok u *BDP* nije signifikantan.

Grafikon 8. Odgovor *dPE* na šok u *dDK*, (*VAR1*) – *SAD*



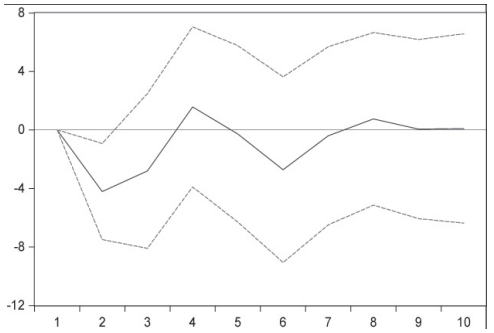
Izvor: Autor

Grafikon 9. Odgovor *dPE* na šok u *dPE*, (*VAR1*) – *SAD*



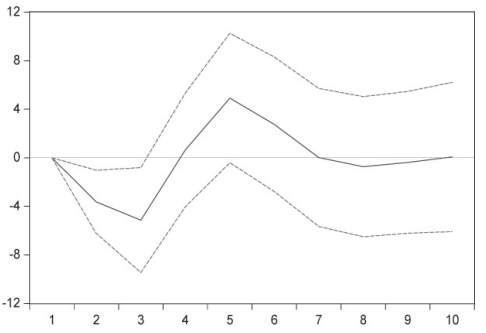
Izvor: Ibid

Grafikon 10. Odgovor *dPE* na šok u *dFFR*, (*VAR1*) –*SAD*



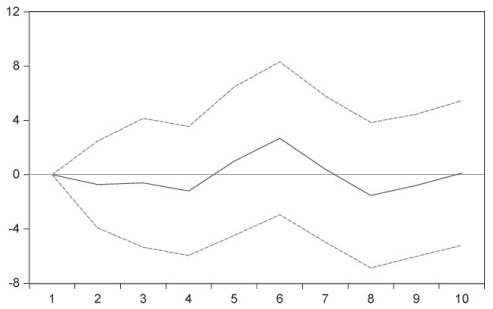
Izvor: Ibid

Grafikon 11. Odgovor *dPE* na šok u *dCPI*, (*VAR1*) –*SAD*



Izvor: Ibid

Grafikon 12. Odgovor *dPE* na šok u *dBDP*, (*VAR1*) – *SAD*



Izvor: Ibid

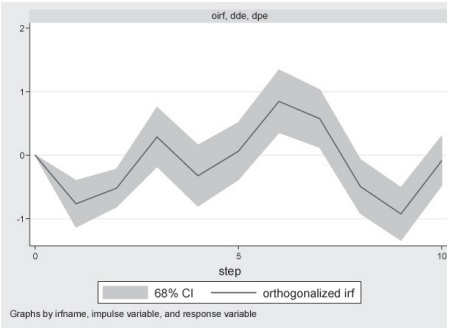
Tabela 4. IRF za PE racio – SAD

Šok u	**dDK**	**dPE**	**dFFR**	**dCPI**	**dBDP**
Znak *IRF*	-	+	-	-	-
Da li je znak *IRF* ekonomski logičan?	Da	Da	Da	Da	Ne
Da li je znak *IRF* signifikantan na nivou od 95%?	Da	Da	Da	Da	Ne

Izvor: Autor

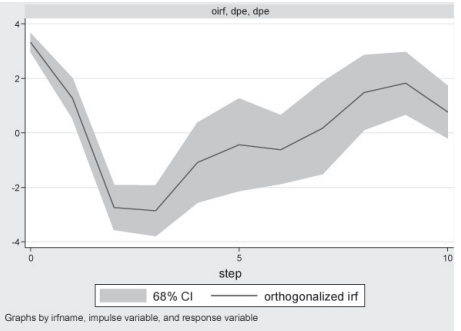
Sve *IRF* su signifikantne (*VAR2*), ali na nivou signifikantnosti od 68% (grafikoni 13 – 17, Tabela 5). Sve *IRF* imaju očekivani znak, pa čak i šok/rast u *BDP*, koji povećava vrijednost firme. Ponovo, kao i u *VAR1*, šok/rast u strukturi kapitala (*dDK*) smanjuje vrijednost firme (*S&P500*). Odgovor vrijednosti firme na rast kamatnih stopa i cijena je rast vrijednosti firme (tj rast *PE* racia za *S&P500*). Sve *IRF* su statistički signifikantne, ali na nižem nivou signifikantnosti, nego u prerhodnom slučaju (Tabela 5). Sve *IRF* su nekoliko kvartala poslije šoka signifikantne na nivou od 68%.

Grafikon 13. Odgovor *dPE* na šok u *dDK*, (*VAR2*) – *SAD*



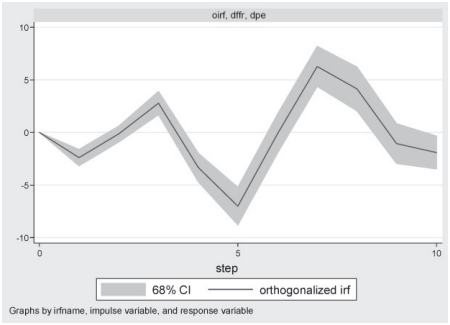
Izvor: Autor

Grafikon 14. Odgovor dPE na šok u dPE, (VAR2) – SAD



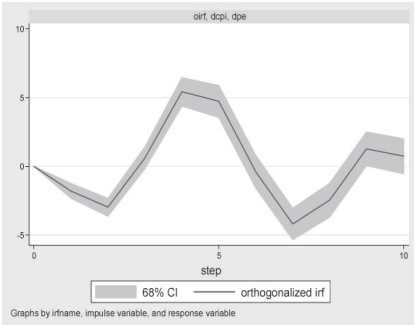
Izvor: Ibid

Grafikon 15. Odgovor dPE na šok u dFFR, (VAR2) – SAD



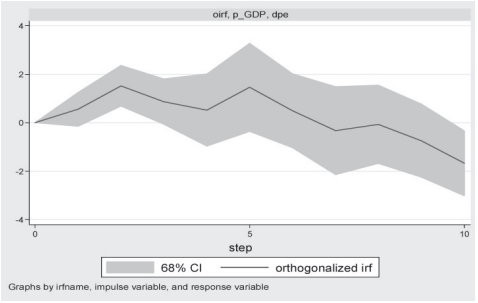
Izvor: Ibid

Grafikon 16. Odgovor dPE na šok u CPI, (VAR2) – SAD



Izvor: Ibid

Grafikon 17. Odgovor dPE na šok u BDP, (VAR2) – SAD



Izvor: Ibid

Tabela 5. IRF za PE racio – SAD

Šok u	**DK**	**PE**	**FFR**	**CPI**	**BDP**
Znak *IRF*	-	+	-	-	+
Da li je znak *IRF* ekonomski logičan?	Da	Da	Da	Da	Da
Da li je znak *IRF* signifikantan na nivou od 68%?	Da	Da	Da	Da	Da

Izvor: Autor

Na finansijskom tržištu Republike Srpske dokazi o uticaju strukture kapitala na vrijednost firme su izvedeni na osnovu regresionog modela (Tabela 6) i panel modela (Tabela 7).

Regresioni model ima odličnu dijagnostiku. Reziduali su normalno raspoređeni (*Jarque Bera* test), njihova srednja vrijednost je nula, nema autokorelacije između reziduala (*Q* statistika), ili je ona u prvom lagu neznatna (*DV* statistika), a nema

ni heteroskedastičnosti (nulta hipoteza o homoskedastičnosti se ne može odbaciti). Tri parametra modela su signifikantni na nivou ispod 1%, a *DK_TLKM* na nivou ispod 5%. Regresori objašnjavaju 91% varijabiliteta u kretanju vrijednosti firme *TLKM*, mjereno posredstvom multiplikatora *PE_TLKM*. Svi regrosori imaju očekivani predznak, pa čak i rast prihoda koji može biti i u pozitivnoj i negativnoj vezi sa vrijednošću firme. Rast prihoda može voditi ka većoj tražnji za akcijama firme i po tom osnovu ka višem *PE* raciu, ali isto tako rast prihoda koji se transformiše u višu zaradu po akciji može smanjiti *PE* racio. Rast zaduženosti firme (rast *DK*) negativno utiče na vrijednost firme. Pod pretpostavkom da je sve ostalo jednako rast zaduženosti firme za jedan procentni poen (*DK_TLKM*) će smanjiti vrijednost firme tj. *PE_TLKM* za 0,18.

Tabela 6. Regresioni model za *TLKM*, zavisno promjenljiva *PE_TLKM*

	Koeficijent	**Standardna greška**	**T statistika**	**P vrijednost**
PE_TLKM(-1)	1,41***	0,20	7,14	0,0002
DK_TLKM	-0,18**	0,07	-2,44	0,0448
Stopa rasta prihoda_*TLKM*	-0,27***	0,075	-3,63	0,0084
Stopa rasta povrata	0,11***	0,019	6,07	0,0005
Dijagnostika				
R^2	0,91			
DV statistika	1,83			
Q statistika (prvi lag)	0,0022 (0,963)			
JB statistika	0,36 (0,83)			
Srednja vrijednost reziduala	-0,01			
Breusch-Pagan-Godfrey test	4,54 (0,337)			

Izvor: Analiza autora. http://blberza.com/Pages/othermarketinfo.aspx?group=1 (pristupljeno 05.11.2017. godine).*** Statistički signifikantno na nivou od 1%, ** Statistički signifikantno na nivou od 5%, * Statistički signifikantno na nivou od 10%.

U sastav indeksa akcija Banjalučke berze a.d. Banjaluka (*BIRS-a*) ulaze vrlo heterogene akcije; firme koje posluju sa gubitkom i firme čijim akcijama se vrlo rijetko trguje. Zato smo iz *BIRS*-a izdvojili tri firme sa približno identičnim karakteristikama. Sa akcijama *BVRU*, *BOKS* i *TLKM* se učestalo trguje, a ove tri firme u posmatranom periodu (2005-2016.godina) nisu nikada iskazale gubitak i stalno imaju pozitivan *PE* racio.

U prva dva modela (Tabela 7), bez fiksnog efekta, svi regresori su signifikantni, ali struktura kapitala ima pozitivan predznak, što je rezultat koji je u suprotnosti sa empirijskim nalazima da relativni rast duga u odnosu na kapital smanjuje vrijednost firme. Kad se u panel uključi fiksni efekat kojim se dopušta varijabilitet u vrijednosti *PE* po jedinicama tj. krosekcijama panela (*BVRU, BOKS, TLKM*) struktura kapitala dobija negativan predznak (zatamnjene ćelije u Tabeli 7), a uticaj relativnog rasta zaduženosti na *PE* je značajno veći nego u regresionom modelu. U prosjeku (Panel 3,4,5) i pod pretpostavkom da je sve ostalo jednako rast relativnog duga (strukture kapitala) za 1 procentni poen smanjuje vrijednost ove tri firme tj. *PE* racio za 0,487 p.p. 0,646 p.p. i 0,73 p.p. U sva tri modela i ostali regresori imaju očekivani znak, a objašnjeni varijabilitet zavisno promjenljive (vrijednosti firme) se kreće u rasponu od 50% do 72%. U odnosu na *DV* test autokorelacije u prvom lagu najbolje karakteristike ima panel 4 (vrijednost *DV* statistike je oko 2). Veza između strukture kapitala i vrijednosti firme je negativna. Rast odnosa duga i kapitala smanjuje vrijednost firme mjerenu sa *PE*, tj smanjuje *PE*. Za viši odnos duga i kapitala investitori, na finansijskom tržištu Republike Srpske, su spremni da za firmu plate manje, nego za niži odnos duga i kapitala. Rast duga u odnosu na kapital motiviše investitore da smanje tražnju za akcijama te firme, odnosno da za istu zaradu po akciji, ponude nižu cijenu, što je jednako smanjenju vrijednosti firme.

Tabela 7. Panel modeli, zavisna promjenljiva *PE*

	Panel 1	**Panel 2**	**Panel 3**	**Panel 4**	**Panel 5**
Broj jedinica	3	3	3	3	3
Broj opservacija	11	11	9	9	9
Broj panel opservacija	33	33	27	27	27
Konstanta			26,30 (5,17)***	31,03 (4,77)***	32,56 (5,51)***
PE(-1)	0,385 (3,325)***	0,30 (2,72)***			
PE(-2)			0,164 (1,89)**		
***DK*(-1)**	**0,207 (3,124)*** **	**0,128 (1,9)** **			
***DK*(-3)**			**-0,487 (-3,16)*** **	**-0,646 (-3,00)*** **	**-0,73 (-3,71)*** **
Stopa rasta prihoda	-0,303 (-2,45)***	-0,342 (-2,9)***			0,17 (2,48)***

Stopa rasta prihoda(-1)				0,167 (2,186)***	
Povrat na akcije		0,103 (1,83)**			0,074 (2,44)***
Euribor		3,66 (2,93)***			
Balon na tržištu akcija	12,57 (2,06)***				
Fiksni efekat					
-BOKS-C			10,75	14,65	16,96
-BVRU-C			-4,35	-8,44	-10,02
-TLKM-C			6,40	-6,21	-6,90
Dijagnostika					
R^2	0,32	0,44	0,72	0,50	0,61
DV statistika	1,48	1,09	2,06	2,23	2,50

Izvor: Ibid. *** Statistički signifikantno na nivou od 1%, ** Statistički signifikantno na nivou od 5%, * Statistički signifikantno na nivou od 10%. U zagradi je t statistika

ZAKLJUČNA RAZMATRANJA

Teorijska istraživanja (Miler-Modiljani teorema) su došla do zaključka da struktura kapitala, pod određenim pretpostavkama, ne utiče na vrijednost firme. Teoremu Miler-Modiljani smo testirali na najrazvijenijem svijetskom finansijskom tržištu (*SAD*), a provjerili smo je i na reprezentativnom dijelu finansijskog tržišta Republike Srpske. Naši nalazi, koji zbog prirode ekonomskog procesa nisu mogli biti izvedeni u strogim eksperimentalnim uslovima, tj. uvažavajući sve pretpostave Miler-Modiljani teoreme, pokazuju da struktura kapitala utiče na vrijednost firme, iskazanu kao odnos cijene po akciji i zarade po akciji (*PE*). Do ovakvoga zaključka smo došli i za strano (američko) tržište, kao i za domaće tržište. Potvrđene su ostale teorije kapitala koje u većoj ili manjoj mjeri prihvataju uticaj strukture kapitala na vrijednost firme i koje implicitno ili eksplicitno priznaju postojanje optimalne strukture kapitala, za razliku od MM teoreme.

VAR modeli (*VAR1*, *VAR2*) za ekonomiju *SAD* i sa *PE* za *S&P500* kao zavisno promjenljivom dokazuje ovakvu vrstu odnosa. Rast odnosa duga i kapitala smanjuje vrijednost *PE*, tj smanjuje vrijednost firmi koje ulaze u sastav *S&P500*. Nalaz je istovjetan za oba *VAR* modela, bez ili sa restrikcijama, sa tom razlikom da su u prvom modelu sve *IRF* signifikantne na nivou od 95%, a u drugom na nivou od 68%.

I na srpskom finansijskom tržištu uticaj strukture kapital na vrijednost firme je kao i na tržištu *SAD*. Dokazali smo to na primjeru jedne akcije/firme, a i na primjeru panela od tri firme. U regresionom modelu za preduzeće Telekom Srpske a.d. Banjaluka (*TLKM*) rast odnosa duga i kapitala obara vrijednost firme za 0,18 p.p. U panel modelima, sa fiksnim efektom, takođe je uspostavljen inverzni odnos u kretanju vrijednosti firme i strukture kapitala. Rast u vrijednosti strukture kapital (dug/kapital) za 1 p.p. smanjuje vrijednost/*PE* racio reprezentativnih firmi za u prosjeku 0,621.

Istraživanje, sprovedeno za strano i domaće tržište, nije potvrdilo *MM* teoremu i nije ostavilo nikakvu dilemu u pogledu uticaja strukture kapitala na vrijednost firme. Vrijednost firme nije indiferentna na strukturu kapitala. Između ovih varijabli postoji veza, ona je inverzna i statistički je visoko-signifikantna.

Dalja istraživanja odnosa između strukture kapitala i vrijednosti firme, na srpskom i bosanskohercegovačkom tržištu, bi se mogla zasnivati na drugačijoj definiciji vrijednosti firme, upotrebi drugačijih specifikacija za regresione i *VAR* modele, većem domaćem panelu, panelu za firme koje su na kotaciji na *SASE i BLSE*, ili panelu koji bi uključio i domaće i ino varijable.

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IMPACT OF THE CAPITAL STRUCTURE ON THE VALUE OF US AND SERBIAN FIRMS

Dragan S. Jović

Abstract: *According to the Modigliani–Miller theorem, the value of the company does not depend on the capital structure (debt to equity ratio). We checked the theorem in two financial markets, the global one and the regional one. In the research, we used a multiple linear regression model, panel model and VAR. The theorem did not withstand an empirical check on the financial markets of the United States and the Republic of Srpska. The value of American and Serbian firms is not indifferent to the movement in the capital structure. The growth of debt in relation to the capital in the USA and the Republic of Srpska diminishes the value of firms, i.e., value of the PE ratio. The inverse relationship between the capital structure and the value of capital is economically logical and expected, because the growth of indebtedness increases the risk of liquidity and solvency. The growth of indebtedness influences reducing of the demand for company shares and reducing of the value of the firm, i.e. reduction of the PE ratio.*

Keywords: *capital structure, price earnings ratio, company value, S&P500.*

JEL classification: *G32, G12.*

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PREGLEDNI NAUČNI RAD / OVERVIEW SCIENTIFIC PAPER

MACROECONOMIC MOVEMENTS OF THE WESTERN BALKAN COUNTRIES ECONOMY

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Abstract: *The aim of this research is to determine based on a statistical analysis of the macroeconomic trends, the achieved level of recovery and development in the economy of the Western Balkan countries after 2008. In the global economic history, 2008 will be remembered as the year in which many developed and developing countries faced an economic crisis, which was reflected in the decline in general economic indicators.*

Some experts explain economic crises and recession as accumulated imbalances in relations between basic macroeconomic aggregates and in that sense the crisis is just one of the stages in business cycles. The paper deals with theoretical views regarding this topic, and the conducted empirical research included four countries of the Western Balkans, Serbia, Croatia, Montenegro and Bosnia and Herzegovina. The survey gives a clear overview of the macroeconomic trends of the Western Balkan countries with appropriate explanations, which enabled the selection of countries by set criteria. Comparative analysis between countries pointed to good and bad macroeconomic trends in certain periods.

Key words: *macroeconomic development, Western Balkan countries, economic crisis*

JEL classification: *O11, M21*

INTRODUCTION

The general macroeconomic equilibrium is the goal of every national economy and for creators of economic policy. By quantitative and qualitative consideration of macroeconomic trends and reacting to the same, this goal is achievable. Grandov Zorka, Vojvodić Anka and Vučičević Marko (2011: 179) conclude that: „Economic and political changes in the European countries in transition (ECT)

and the transition to the market economy require changes in the micro and macro level of business, with the simultaneous building of legal and institutional infrastructure that should enable and support these changes."

Competitiveness of the economy and economic development supported by human resources are the fields of the analysis of numerous authors. Attempts to solve the problem of unemployment have not showed much success in practice and the trends of economic development are not encouraging primarily due to the difficult social and economic reality. Petrović Jelena, Jovanović Marija and Mandžukić Ljiljan (2013) conclude that the main goals of each country's macroeconomic policy are economic growth and high employment, in addition to the stability of prices and balance of payments. A significant place is occupied by the problem of a high budget deficit, which has a tendency to reduce purchasing power, a large share of public debt in relation to GDP (gross domestic product), a decrease in lending activity of banks, and a decrease in industrial production (as measures of GDP) and return to recession. The negative effect of factors from abroad, such as a reduced inflow of foreign direct investment or a decrease in the export demand due to slow recovery of the main export partners, significantly slows down economic development.

The period after the economic crisis in 2008 was characterized by reduced economic activity with poor macroeconomic indicators in the countries of the Western Balkans. Only acceleration of economic activity and an increase in the level of employment contributed to the growth of consumption as the main driver of growth.

THEORETHICAL CONSIDERATIONS

As Josifidis Kosta claims (2010), the goals of macroeconomics are determined by national legislation, institutional arrangements, and above all, in the daily political context, the programs of political parties and their leaders.

Sustainable and stable growth of gross domestic product

The requirement to measure national production arises from the need for international comparisons of national economies and the analysis of economic activities of a country in a given interval, with the aim of better planning the future flows of the certain country., the gross domestic product is usually taken as an adequate indicator of the state of one economy.

According to Kuzmanović Đurić Tatjana (2007: 61) gross domestic product (GDP) represents the total production of goods and services that has been realized in the national economy for one year, regardless of ownership. Also, GDP is defined as the most well-known and most frequently used macroeconomic aggregate of the National Accounts System. It represents the sum of manufactured goods and services in a given period of time (usually during one calendar year) in a national economy, regardless of ownership (Veselinović Petar, 2013: 16). GDP can also be viewed as: "an aggregate expression of the national production of goods and services" (Josifidis, 2010: 53).

Reducing the unemployment rate

One of the key economic performances is the unemployment rate. Unemployment reacts simultaneously with the economy as a whole. It decreases and increases in line with business cycles. Unemployment is seen as a situation in which working-age population can not find a recruitment suitable to their qualifications. Unemployment appears completely equal in both developed and underdeveloped countries with a low level of living standard. As Veselinović (2013) indicates the inadequate utilization of the human potential of a country has a direct impact on its national economy and gross domestic product, which, among other things, results in low living standards and poverty.

In the focus of development priorities, the issue of high unemployment of human resources should also be addressed. The economic development process must also be supported by an adequately skilled workforce that will be able to ease the attractiveness of foreign direct investment and orientation toward agriculture and industry, the incentive of all forms of entrepreneurship, increasing production, exports and the like. The reform of the labor market, the education system (in the function of human resources development) and the employment system, with the aim of reducing the unemployment of the labor force, would certainly contribute to economic development. The problem of high unemployment carries with itself other consequences, such as political, social, demographic and other.

Employment of the working-age population is one of the key issues for each country and its financial system. Restructuring the economy has just marked this issue. In addition to the level of gross domestic product, this is certainly the most effective indicator of the efficiency of one economy, and society as a whole. The first and key thing to boosting performance, not just the labor market, but also the national economy as a whole, is to improve labor supply in terms

of enriching both the unemployed and the employed, which implies significant investment in human capital. These are the fastest way to increase employment, and to reduce poverty but also to increase the ability of the population to invest funds into the banking sector.

According to Josifidis: "Unemployment rate is the ratio of the number of unemployed and the total workforce (the sum of employed and unemployed persons). It is closely linked to the growth rate of real output. The relationship between these two categories was defined by A. M. Okun who greatly contributed to the macroeconomics with the so-called Okun's law, which stands that: The inverse relationship between the fluctuation of real output over its growth trend and the fluctuation of the unemployment rate around its equilibrium level (Josifidis, 2010: 224). In the example, this would look like this: a decrease or an increase in unemployment occurs when real output increases or decreases faster or slower than the potential product.

The tendency of reducing the number of unemployed due to demographic trends is an understandable flow, however, when there is a faster growth of employees than GDP growth, such a phenomenon does not have a foothold in demographic or economic factors. Such a movement is a source of worry. Employment growth (real growth, not growth due to changes or omissions in statistical coverage) faster than GDP growth reflects the decline in labor productivity and the rise in labor costs. This scenario reflects a decline in the competitiveness of a country's economy. Thus, in normal circumstances, the decline in production entails a slower decline in the level of employment at a lower rate.

Improving living standards

The living standard of the population can be shown through their purchasing power, i.e. through the quantity and quality of goods in the consumer basket. Material well-being represents the consumption of households and, by general understanding, defines the level of living standard. Measuring living standards is done through the income or consumption of households. However, a more reliable measure of living standard is consumption.

By analyzing the living standard of a particular country, more illustrations can be indirectly concluded. Thus, observing the underdeveloped countries, the low general living standard of the majority of the population is noted. According to Kuzmanović (2007) the status of this population manifests itself quantitatively and qualitatively in the form of low income (poor), inadequate housing, modest

health, limited education, high child mortality, short life expectancy and low business expectations, and in many cases the general sense of hopelessness and apathy.

As Veselinović (2013) states, the importance of living standards stems from the fact that people are the true wealth of each country and that the basic goal of economic (and social) development should be to create the conditions for the full satisfaction of their needs. Economic development, by itself, does not guarantee a higher standard of living for the population. A country that is more successful in achieving economic development does not automatically have to be more successful in raising living standards. It is important how funds are used and how they are distributed among members of society. Greater equity in the distribution of realized gross domestic product means that a greater number of people have the opportunity to satisfy their material, cultural and other needs to a greater extent, which is positively reflected on the living standard of the population.

Thus, the economic development and living standard of the population are interconnected and conditioned. Namely, higher household consumption contributes to higher production, and to economic development. Manufacturers are improving the system of work, making it more economical and efficient. Consumers meet their needs by increasing their physical and intellectual potentials to further ensure their survival. The problem of low living standards is reflected in a growing number of household members (as well as income per household member) and the ever-increasing cost of living since the arrival. It is quite understandable that under these conditions there is a tendentious decline in the quality of life of the population.

Low and stable inflation

Based on the views of authors Becić Sonja and Krstić Ivan (2013: 200), the general economic equilibrium can be presented as a situation in which one economy operates in conditions of equilibrium, i.e. when aggregate supply and demand are equal. When the balance-equilibrium is considered globally, it is tied to the general price level. As there is global growth in the general price level, due to numerous instabilities, the term that describes this period is called the "century of inflation."

The phenomenon of inflation can be briefly defined as a constant rise in the general price level. Inflation is characterized by universality, the ability to quickly overflow and spread, as well as durability. Its presence is particularly noticeable in developing countries due to lack of funding for development. In periods of slow

development, inflation is often used as an instrument for achieving certain goals, and in particular is meant to achieve a higher level of economic development and achieve employment growth. As has already been pointed out, high inflation also entails an increase in unemployment (Philips curve), a slowdown in economic growth and an ever-increasing recession. If the irreversible effect of inflation would be painfully described, it could be compared with a disease that destroys the human organism and never returns it to its original state. Thus, the economy that falls into the state of inflation, most often activated in times of wars and crises, does not reach the initial level after that.

Veselinović (2013) considers inflation to have positive and negative effects on the economy of one country. Positive effects include:

- In the first place there is an incentive for the rate of growth and production. The general attitude is that the effect of inflation through the growth of money supply is overestimated and that it will lead to a slight increase in prices, rather than to the activattion of unused capacities and labor.
- Additional issuing of money can currently improve the situation and encourage action, but can not accelerate the country's economic development in the long run.
- In periods of inflation, investments are low and seem profitable, especially those that are covered by bank loans, as interest rates often cover inflation. Access to this kind of financing is payable, as it returns to the lender significantly less, especially when it comes to long-term loans.
- In periods when inflation is present, consumption is stimulated, because it is not advisable to save money. Then consumption is more prevalent, as the population wants to transfer its assets into real assets.
- Regarding the negative effect of inflation on the economy of one country, a few can be distinguished:
- Inflation affects the decreasing of purchasing power of money.
- The growth in the price of one countryin relation to the other country encourages an increase in imports and a decrease in exports, and the ultimate result is a decline in competitive advantage in the foreign market.
- Business activities of business entities are losing on its importance and business uncertainty is present in the long run.
- From the aspect of social activity, inflation has the most impact on the weakest population and saves those who do not need help.
- Inflation growth forces households to spend more money in order to achieve and maintain the same level of consumption, i.e. the same level of living standard.

All things considered, it can be seen that all the negative effects of inflation are incomparably greater than the advantages it brings in terms of stimulating growth rates, increasing employment and creating an adequate business climate.

Only in conditions of moderate inflation it could be beneficial to economic development, especially in case when capacities and labor force are poorly used. Any progress in the level of inflation brings more unfavorable consequences than the benefits that it can bring to the economy of a country.

When it comes to the negative effect of inflation, we can consider its effects on the banking sector, by lowering the level of approved loans to enterprises and increasing the costs of refinancing operations. In developed economies, banks are rapidly adjusting to inflation by increasing interest rates on deposit potential and loans. Such a move increases the risk of inability to collect credit, which reduces their availability, but also increases banking costs. When inflationary expectations are high, clients who are usually not able to repay the approved loan are "drawn" into the financial sector. In order to prevent the emergence of problems, banks linearly reduce the availability of credit to all customers. Hence, inflation growth has detrimental effects on economic growth also through the financial sector.

EMPIRICAL OVERVIEW OF MACROECONOMIC MOVEMENT OF THE WESTERN BALKANS ECONOMY

An important role in the functioning of one economy, company business operations, business operations of financial institutions, certainly have some macroeconomic trends, such as the movement of gross domestic product, consumer price index, unemployment rates and living standards. A review of macroeconomic trends in the economy of the Western Balkan countries generates a basis for conducting a comparative analysis of these movements.

Serbia

When it comes to the movement of GDP in Serbia, there are two periods when the values had a negative sign. First, in 2009, when the results of the global economic crisis were noticed; then, in 2014, when large floods made Serbia's economy enter the recession period. A slight recovery followed in 2015. The growth of the economy is directed towards investments and exports (beyond the consumption-oriented concept) as key drivers of economic activity.

The first decline in GDP value occurred in 2009 in response to the 2008 global economic crisis. As one of the most important macroeconomic aggregates, the gross domestic product of the Republic of Serbia in 2010 increased by about 1%, which only recovered about half of the fall in production from the previous year. Economic recovery continued during the beginning of 2011 and was slightly accelerated compared to the last quarter of 2010. This does not mean that Serbia has left the zone of insufficient economic growth. The reason for the cyclical movement of GDP in percentages from positive to negative is the change in its constituent parts. The next decline in GDP values was caused mainly by the large floods that occurred in the spring of 2014 and due to low external demand. The consequences of this mild recession have been felt next year, followed by a moderate recovery.

The weather conditions at the beginning of 2017 had negative consequences on developments in agriculture, mining, energy and construction. The growth of the gross domestic product of Serbia in the first half of the year was 1.2% year over year supported by a series of positive movements in the manufacturing industry and most of the service sectors. Observed by the processing industry, the growth in the physical volume of production in the first half of the year was recorded in 18 out of 24 areas, or 85% of the manufacturing industry. Investing in new projects in certain areas of the manufacturing industry contributed to this growth, in addition to increased external demand. If the expenditure side is observed, GDP growth was stimulated by domestic consumption and investment. Household consumption has had a positive impact thanks to a reduction in unemployment and a rise in wages in the private sector. Macroeconomic and financial stability, better investment and business environment, as well as realization of infrastructure projects are factors which have contributed to the growth of investments (National Bank of Serbia, 2017).

Unemployment in Serbia reached the highest value in 2012, as much as 22.2% of the total workforce. The high unemployment rate due to the reduced production volume is one of the reasons for the decline in GDP in 2009. Also, the reduced aggregate demand (both domestic and foreign) affected the volume of GDP, which had a negative impact on the expectations related to the development of the Serbian economy. The National Employment Service has registered about 724 thousand of unemployed in 2015. The unemployment rate in Serbia decreased to 19%, in Croatia 16.7%, while Macedonia had 27.9% of the unemployed, Albania 16.1%, Montenegro 19.1%. Although the previously mentioned data on the decline in employment and the growth of unemployment do not fully

correspond (much higher decline in employment than the increase in unemployment), it is certain that the crisis has major adverse effects on our labor market. Based on an expert assessment, this macroeconomic risk had a tendency to grow during the period 2008-2015 (when it recorded a slight decrease) and had an effect on the further progress of economic activity, until new productive jobs are created through investments and further growth of economic activity.

Serbia is facing several key problems that hinder economic development. This is, above all, the excessive influence of the state on the economy, the underdeveloped private sector, low investments, poor infrastructure, the participation of the gray economy, etc. For these reasons, it is urgent to take measures for the reconstruction of state enterprises and public administration as weel as to improve business environment and financial stability.

The following chart shows the movement of macroeconomic indicators in Serbia, where slight improvement in the living standard of the population, unemployment rates, stable inflation and GDP growth can be noticed in the last three years of the analyzed period.

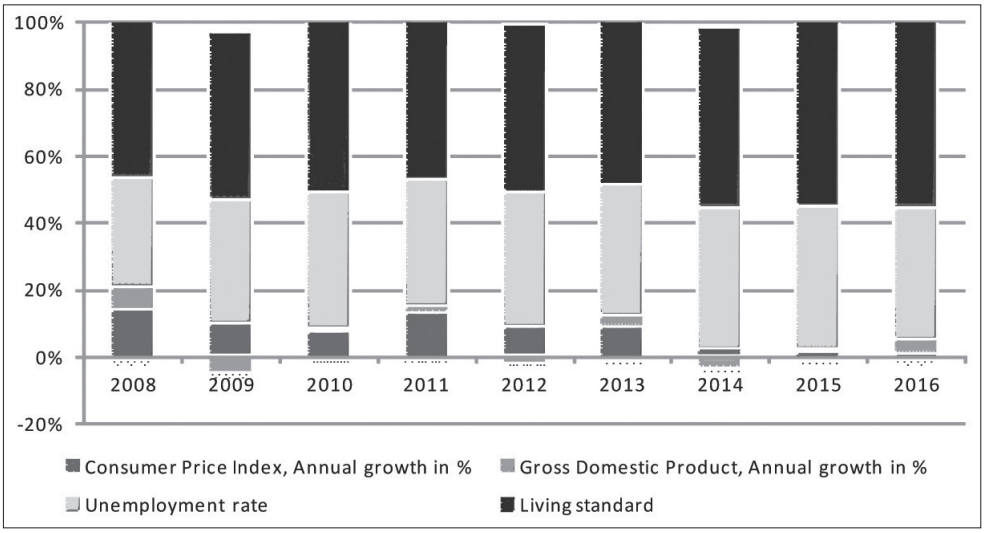

Chart 1: Macroeconomic trends in the economy in Serbia

Source: Author, based on NBS data

Croatia

When it comes to macroeconomic developments in Croatia, it can be said that the global economic crisis of 2008 made deep structural problems becoming more visible and more important. Some of them relate to a weakly competitive export industry, large private debt, a neglected labor market and inadequate public financial management. These problems escalated even further due to the unfavorable environment, so the economic adjustment slowed down, and the recession deepened. Therefore, the decline in GDP value refers to reduced domestic demand, and especially investment. Its decline is also the result of the weakness of the economy due to the decline in exports, the reconstruction of the shipbuilding sector. Domestic demand declined, but in 2013 there was a slight recovery attributed to joining the European Union, higher household spending and greater hospitality activities. In 2014, there was an increase of 0.5% and in 2015 of 1.2%, as a reflection of improving access to European structural and investment funds. The further GDP growth is stopped by fiscal adjustment (European Commission - Main Economic and Financial Affairs Office, 2014, page 17).

Inflation measured by the consumer price index recorded a decrease in 2013 to 2.2% in Croatia, primarily due to unpaid taxes and regulated prices.

The unemployment rate was also hit by the recession and in 2016 it was 14.7%. The highest rates were recorded in 2012 and 2013, when they were 20.9% and 21.5%, which is certainly lower compared to Serbia and Bosnia and Herzegovina during that period. Further growth in unemployment has been hampered by employment in an already growing public sector. Problems are found in legislation that raises labor costs and hinders the creation of new jobs. Unemployment rates are below average in relation to the European Union average, and this disproportion is the result of a lack of fiscal space for the implementation of social policy measures. In their research Krnić and Radošević state that "Croatia has one of the smallest work contingents in Europe, and at the same time belongs to the countries with the highest unemployment rate" (Krnić Branko and Radošević Dubravko, 2014: 14).

The following chart shows the movements of the explained macroeconomic indicators in Croatia, where the last year of the analyzed period can be assessed as the best in terms of the highest living standard of the population, the lowest unemployment rate and GDP growth, but with negative inflation growth.

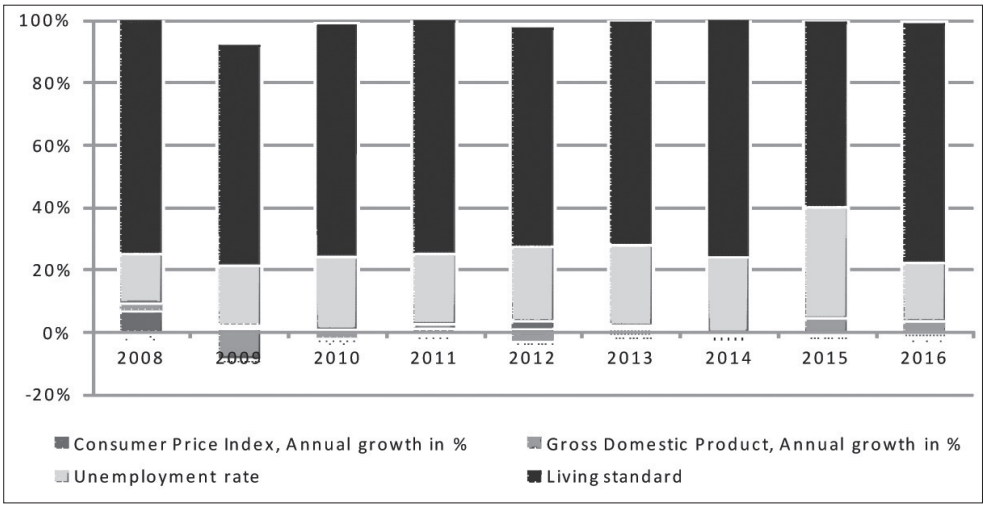

Chart 2: Macroeconomic trends in the economy in Croatia

Source: Author, based on: www.dzs.hr, www.imf.org, www.data.worldbank.org

Montenegro

When it comes to macroeconomic developments in Montenegro, as a small and open economy, it did not escape the crisis from other markets, which was reflected on the functioning of the Montenegrin market. According to the data of the Central Bank of Montenegro, in 2016, the economy recorded an economic growth of 2.9%. In this period, growth was achieved in the agriculture, forestry and fishing industry, financial activities and insurance activities, construction, electricity supply, while the decline was recorded in the trade, tourism, processing industry, etc. GDP growth rates have been in most of the period 2008-2016 had higher values than other countries in the analysis, which can be seend in the summary chart of the observed countries.

Inflation, measured by the consumer price index, was 1% in 2016, while its average annual value was -0.3%. Compared to other countries in the region, Montenegro had, in all analyzed periods,a lower average annual value compared to Serbia (except for 2008 and 2009), while Croatia and Bosnia and Herzegovina had approximate values.

When it comes to the unemployment rate, in 2016 it was 17.1%. Based on the data in the next chart, it can be noted that the highest unemployment rate was in 2008 when the global economic crisis took place, and in 2014 signs of mild

recovery were noticed. Compared to Croatia, Montenegro recorded similar unemployment rates, while Serbia and Bosnia and Herzegovina had a worse value for this indicator of economic development.

The following chart shows the movement of the explained macroeconomic indicators in Montenegro, where their instability can be noticed during the analyzed period.

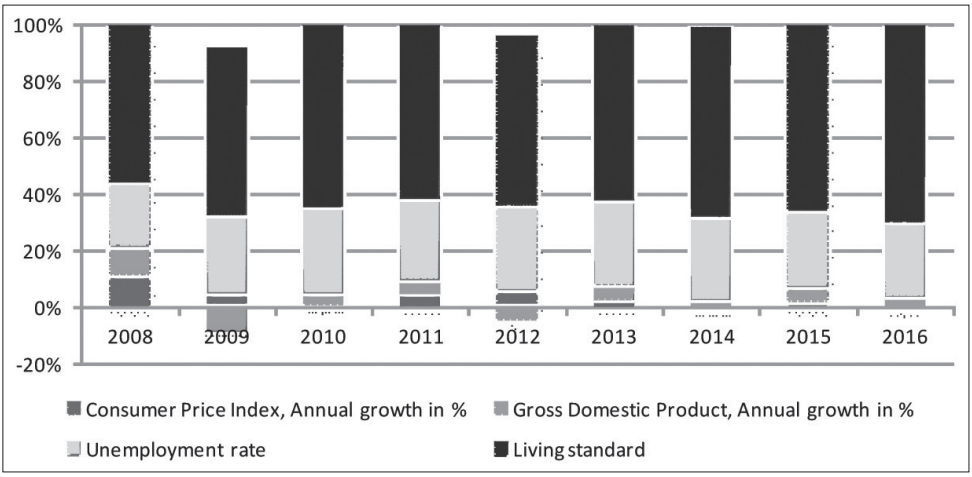

Chart 3: Macroeconomic trends in the economy in Montenegro

Source: Author, based on the data from: www.monstat.org, www.imf.org, www.data.worldbank.org

Bosnia and Herzegovina

With regard to macroeconomic developments in Bosnia and Herzegovina, according to the report of the Council of Ministers - the Directorate for Economic Planning, economic growth slightly increased in 2016, when it was 3.144% compared to 2015 when it amounted to 3.077% (Council of Ministers - Directorate for Economic Planning, 2017: 7). However, in Serbia, in the same period, economic growth increased several times, from 0.8% to 3.8% in 2016. A similar situation existed in Croatia, where growth was 3.165% in 2016, and in 2015 it was 2.347%. Montenegro has not achieved economic growth in this period. The progress of countries in the region contributed to the export demand of Bosnia and Herzegovina, while domestic demand was not high due to reduced foreign investment in consumption.

According to the report of the Council of Ministers - Directorate for Economic Planning, due to the economic growth in 2016, unemployment was reduced from 27.7% to 25.4%, although according to this indicator Bosnia and Herze-

govina was among the first in the countries of the region. Interesting is the fact that there is a big difference between the registered data on the labor force and the survey data, which indicates the existence of a significant informal labor market (gray economy). This increase in the number of employees with disinflation positively affected the growth of private consumption (Council of Ministers - Directorate for Economic Planning, 2016: 13).

Inflation, measured by the consumer price index, in 2016, its average annual value was -1.3%. Compared to other countries in the region, Bosnia and Herzegovina had approximate values as Croatia, while Montenegro and Serbia had approximate values in almost all analyzed periods. According to all of the above, it can be concluded that disinflation did not negatively affect the production and employment level due to the decrease of the producers' revenues (due to the fall in world prices and cheaper raw materials and energy) (Council of Ministers - Directorate for Economic Planning, 2017: 7).

The following graph shows the movements of the explained macroeconomic indicators in Bosnia and Herzegovina, where in the last five years of the analyzed period, we can see the constant in the values of the indicators of living standard of the population and the unemployment rate and GDP growth, but with negative inflation growth.

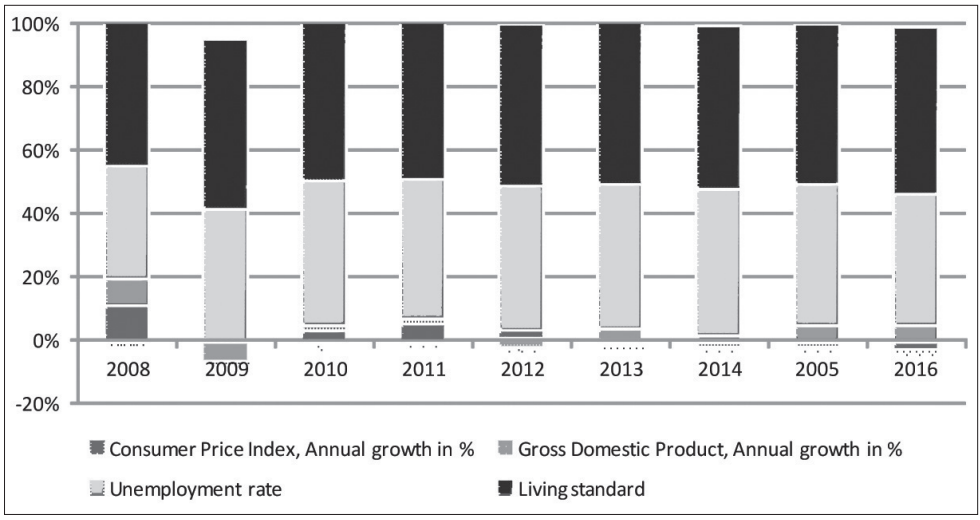

Chart 4: Macroeconomic trends in the economy in Bosnia and Herzegovina

Source: Author, based on the data: www.dzs.hr, www.monstat.org, www.imf.org, www.data.worldbank.org

Currently, the living standard of the population in the countries of the region is below the average of the countries of the European Union (EU28). While in the EU the average is about 60%, in 2016 it was in Serbia 37%, Croatia 60%, Bosnia and Herzegovina 31%, and in Montenegro 46%. In the period 2008-2016 Croatia recorded the highest values of the indicator of living standard, followed by Montenegro, Serbia and Bosnia and Herzegovina. In order to improve the living standard of the population, it is necessary to improve economic growth and development.

COMPARATIVE ANALYSIS OF MACROECONOMIC MOVEMENTS OF THE ECONOMY IN THE WESTERN BALKANS COUNTRIES

Comparative analysis and comparisons of data across countries will contribute to a clearer consideration of the trends in macroeconomic determinants determinants in the countries of the region - Serbia, Croatia, Montenegro and Bosnia and Herzegovina.

The model of economic growth in Serbia, which was present before the economic crisis itself, relied on large inflows of funds from abroad with low levels of domestic savings. High level of indebtedness is the result of low investments and a high deficit of current external payments. In the post-crisis period, it is necessary for the state to mobilize its capacities in order to suppress the effects of the global crisis, inflation and to fight against unemployment, so that citizens have the means to save. It is believed that: "As a result of the growing tendency towards the global economy and the pressures of the economic and financial crisis in transition countries, attracting foreign direct investment is seen as a very important instrument for improving economic development, accelerating transition, and fostering economic growth" (Grandov Zorka, Stankov Biljana, Đokić Maja, 2013: 174). Grandov Zorka, Stankov Biljana and Roganović Milijana (2014: 164) conclude on the basis of the examples of Serbia and Romania: "Previous experience has shown that only the application of tax incentives is not enough to attract foreign investors, but that they come to light only after the country creates appropriate investment climate and apply non-tax incentives. Therefore, it is very important that, in addition to the above, provide financial support to foreign investors in Serbia and Romania, primarily in the form of granting non--refundable funds under various government programs.

Based on the previously explained macroeconomic trends in the economy, Serbia has lower unemployment rates compared to Croatia. The average annual growth

of the consumer price index is mostly visible in Serbia, then in Montenegro, Bosnia and Herzegovina and at the end the lowest rate is achieved by Croatia. GDP trends indicate the highest values in Montenegro, then in Bosnia and Herzegovina, Serbia and Croatia.

The generator of the development of the economy of Montenegro in the last few years was an inflow of capital. Significant amounts of funds were directed towards start-up projects in the field of tourism, towards the energy sector in terms of the construction of hydroelectric power plants, towards the public sector in the direction of the construction of the highway (Central Bank of Montenegro, 2017). According to Žugić, the governor of the supreme monetary institution: "I do not find investment in infrastructure wrong because it will create future benefits and increase the safety of traffic" (Montenegrin Financial Portal, 2018). A single capital investment for the operation of the highway will increase economic activity, but it will also increase public debt, and in this regard, it is disputable whether it is wise to enter into such ventures. Therefore, an important fact when approving large infrastructure projects is that the development component ensures the sustainability of public debt.

In order to achieve macroeconomic equilibrium as the desireable goal, price stability, low unemployment rate, domestic and external equilibrium with constant economic growth and development are necessary. For Bosnia and Herzegovina, this goal is achievable if we approach improvements in budget management, fiscal consolidation and adequate public debt management, as well as creating conditions for increasing competitiveness and employment levels.

The following chart summarizes all the macroeconomic determinants of the economic development of the Western Balkans in the period 2008-2016. As a general conclusion, it can be stated that the 2008 global economic crisis affected the economic growth of all observed countries. The decline in GDP in 2012 in Montenegro, for example, was conditioned by the reduced activity in agriculture, fishery, forestry, construction and manufacturing. In Croatia, the decline in GDP is linked to the strengthening of negative trends in the domestic economy and problems in the eurozone. For Serbia, 2012 was also a bad year as a result of political uncertainty and worsening weather conditions. In Bosnia and Herzegovina, the decline in GDP was the result of reduced economic activity. Recovery from the effects of the economic crisis was recorded in all analyzed countries in 2013, except Croatia. Also, the floods in 2014 had a negative impact on Serbia and Croatia.

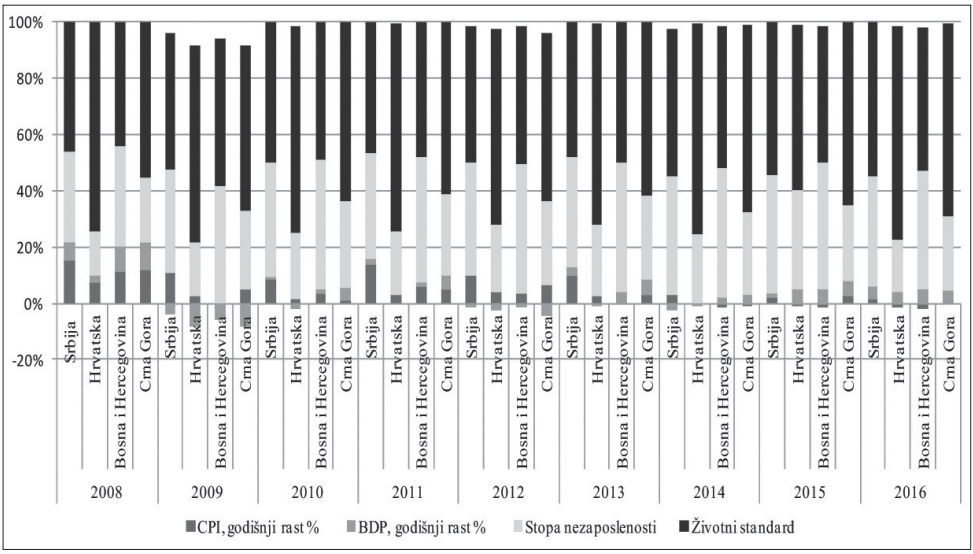

Chart 5: Summary overview of macroeconomic trends in the economy of the Western Balkans (by the country)

Source: Author, based on data from: www.dzs.hr, www.monstat.org, www.imf.org, www.data.worldbank.org

Based on all analyzed macroeconomic trends in the economy, it can be concluded that there were two waves of negative economic growth in 2008 and 2012 for all observed countries. Montenegro can be distinguished as the country with the highest GDP growth values in the observed period, followed by Bosnia and Herzegovina, Serbia and Croatia. Natural disasters, that is May 2014, have had a negative impact on economic growth in Serbia, Bosnia and Herzegovina and Croatia. Serbia stands out as the country with the highest unemployment rate, followed by Bosnia and Herzegovina, Montenegro and Croatia. The global economic crisis has deepened the unemployment problem in Serbia. The period of privatization should have enabled the expansion of employment. However, the process of labor restructuring in privatized companies only fictitiously increased the employment rate. If the period by 2012 is analyzed, it can be noticed that all countries had the inflation where Serbia re-emerges as the country with the highest inflation rates, followed by Croatia, Montenegro, Bosnia and Herzegovina. During 2014, for most countries (except Serbia), negative inflation growth is expected result of the crisis and increased savings, reduced wages and low living standards. With regard to the movement of the living standard, this indicator did not have any significant changes during the observed period. According to the standard of living standard, Croatia took the first place, followed by Montenegro, Serbia and Bosnia and Herzegovina.

Therefore, regarding the observed countries in the region, Serbia is the country with the highest rates of unemployment and inflation, with the lowest GDP values in the last years of the analyzed period.

CONCLUSION

Research in social sciences is accompanied by certain limitations that are distinguished by different criteria. As far as this research is concerned, the fact is that the research covered the period in which the economic crisis occurred and that the period after it is characterized by the cyclical movement of individual variables, which can result in statistically significant deviations compared to their long-term movement. Therefore, the movement of variables in the post-crisis period should be considered with a certain degree of caution. This limitation during the research also represents a challenge that shoul ber overcome in the future period. Thus, further research will try to carry out the analysis by periods, i.e. analysis of the macroeconomic trends of the economy before the crisis, during the crisis and after the crisis. The assumption is that by this segmentation of the analysed period, this restriction would be corrected in relation to the deviation of movement in relation to long-term tendencies.

Based on the analyzes of the macroeconomic trends of the economy in Serbia, Croatia, Montenegro, Bosnia and Herzegovina, it has been shown that Serbia is the country with the highest unemployment and inflation rates, with the lowest rates of GDP and the level of living standard below the level of Croatia and Montenegro in the last years of the analyzed period. Also, macroeconomic developments in the Western Balkan countries are below the level of countries that are members of the European Union. As the Western Balkan countries pursue a policy of joining the European Union, they should intensify efforts to improve macroeconomic indicators and maintain macroeconomic stability. It can be concluded that the countries of the Western Balkans are striving to achieve the target level of employment in the long run, and also living standards, not only in the domestic but also in the wider market, and it is necessary to harmonize the employment policy with the development plan, as well as to direct the economy towards the production and implementation of strategically defined goals.

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MAKROEKONOMSKA KRETANJA PRIVREDE ZEMALJA ZAPADNOG BALKANA

Dragana Milić, Zorka Grandov, Maja Đokić

Rezime: *Cilj ovog istraživanja je da na osnovu statističke analize makreokonomskih kretanja privrede zemalja Zapadnog Balkana, nakon 2008. godine, utvrdi dostignuti stepen oporavka i razvoja. U svetskoj ekonomskoj istoriji će 2008. godina biti zapamćena kao godina u kojoj se velik broj kako razvijenih, tako i zemalja u razvoju suočio s ekonomskom krizom što se odrazilo kroz pad opštih privrednih pokazatelja. Pojedini stručnjaci objašnjavaju ekonomske krize i recesiju kao nagomilane neravnoteže u odnosima između osnovnih makroekonomskih agregata i u tom smislu kriza je jedna od faza u privrednim ciklusima. Makroekonomska kretanja privrede u zemljama Zapadnog Balkana međusobno se razlikuju. U radu su obrađeni terijski stavovi o ovoj temi, a sprovedenim empirijskim istraživanjem obuhvaćene su četri zemlje Zapadnog Balkana, Srbija, Hrvatska, Crna Gora, i Bosna i Hercegovina. Istraživanje daje jasan pregled makroekonomskih kretanja privrede zemalja Zapadnog Balkana uz prikladna objašnjenja, što je omogućilo selektovanje zemalja po zadatim kriterijumima. Komparativna analiza između zemalja ukazala je na dobra i loša makreokonomskih kretanja u pojedinim periodima.*

Ključne reči: *makroekonomska kretanja,zemlje Zapadnog Balkana, ekonomska kriza*

Jel klasifikacija: *O11,M21*

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Časopis za ekonomiju i tržišne komunikacije

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PREGLEDNI NAUČNI RAD / OVERVIEW SCIENTIFIC PAPER

DEVELOPMENT OF THE COMPETITIVENESS OF THE REPUBLIC OF CROATIA'S TOURISM WITHIN THE EU MEMBERSHIP

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Abstract: *The purpose of the conducted research is to analyse competitiveness of tourism in the Republic of Croatia by applying Index of tourism competitiveness and travel and to establish, based on conducted analysis, so far effects of Croatia's EU membership on its tourism competitiveness. Also, the purpose of this research is, to establish scientifically based measures to improve Croatian tourism sector and to determine its perspectives for further development. The Republic of Croatia is achieving progress according to key indicators of tourist competitiveness and realizing positive trends in almost all segments of tourism activities. The stated situation represents a challenge in conducting thorough reforms, the increase of quality and further positioning on global tourist market.*

Keywords: *EU, competitiveness, Republic of Croatia, tourism, travel*

JEL Classification*: F02, L83*

INTRODUCTION

Tourism is the most massive and the most dynamic social economy category of modern society. Because of the faster way of living it has transformed itself from secondary to primary human need. Also, because of its economic and social importance, it is becoming one of the key development drivers in EU member states, including the Republic of Croatia. Still, in spite of its formidable foundations in material and natural resources, Republic of Croatia has not yet realized its full potential of this economic branch.

Therefore, research problem in this paper arises just out of difficulties in achieving competitive advantages of Republic of Croatia's tourism, both at European

and world level. Although all relevant indicators point out the significant progress of this economy branch, still certain shortcomings are present. Purpose of conducted research is to analyse competitiveness of tourism in the Republic of Croatia by applying Competitiveness Index of tourism and travel and to establish, based on conducted analysis, so far effects of Croatia's EU membership on its tourism competitiveness. Also, the purpose of this research is, based on conducted analysis, to establish scientifically based measures to improve Croatian tourism sector and to determine its perspectives for further development.

This research is divided into 6 mutually interconnected chapters. After introduction, in which key elements of research are defined, competitiveness analyses of Republic of Croatia's tourism were conducted by applying Tourism and travel competitiveness index. Based on given results, and observed strengths and weaknesses, research was continued on scientifically based identified effects of so far EU membership on Republic of Croatia's tourism competitiveness. Based on identified effects, in the further course of this research, measures and instruments necessary for the improvement of competitive position for Croatian tourism are recommended. This research ends by defying perspectives of tourism competitiveness development in the Republic of Croatia as EU member. Research ends with the conclusion which represents a synthesis of key findings established in the research process.

ANALYSIS OF THE REPUBLIC OF CROATIA'S TOURISM COMPETITIVENESS

According to Republic of Croatia's National Competitiveness Council *competitiveness is country's ability to achieve success on international market which will provide the better living standard for its people.* Competitiveness is a result of many factors among which enterprise-level competitiveness stands out, including favourable business climate which enables implementing new products, processes, and investments. Most commonly used definition of international competitiveness is the one by Organization for Economic Cooperation and Development (2018), which describes competitiveness as *country's ability to produce goods and services in free and equal market conditions, which previously go through the test of international markets, ensuring the keeping and long-term growth of real income.*

Evaluation of competitiveness of Croatian tourism was conducted by using the Index of tourism competitiveness and travel which is issued by World Economic Forum (WEF), and includes „combination of factors and policies which enable

sustainable development of travel and tourism sector, which contributes to sustainable development of certain country" (National Competitiveness Council of the Republic of Croatia, 2018). Competitiveness and Travel Index measures the success of the certain country in travel and tourism sector through 4 categories: Supporting environment, Supporting policies and conditions for travel and tourism, Infrastructure and Natural and cultural riches. Index consists of 14 pillars: *Business environment, Protection and security, Health and hygiene, Human capital and labour market, Readiness of ICT, Tourism and travel sector's priority level, International accessibility, Price competitiveness, Ecological sustainability, Air traffic infrastructure, Land and naval infrastructure, Tourism service's infrastructure, Natural resources, Cultural resources and business travel* (National Competitiveness Council of the Republic of Croatia, 2017.).

Table 1: Leading countries in tourism and travel according to Travel and Tourism Index in 2017

Country	Rank	Change compared to year 2015.
Spain	1.	0
France	2.	0
Germany	3.	0
Japan	4.	5
United Kingdom	5.	0
USA	6.	-2
Australia	7.	0
Italy	8.	0
Canada	9.	1
Switzerland	10.	-4

Source: developed by the authors, based on data from Travel and Tourism Competitiveness Index in 2017

According to indicators in Table 1, Spain has a leading position in an aspect of travel and tourism, followed by France and Germany. The analysis shows that six countries have kept their positions from the year 2015. The largest decline was achieved by Switzerland, which has dropped 4 places, and the USA, which has worsened its competitive position for 2 places.

Next is the analysis of positions from other EU members according to the competitiveness of travel and tourism indicator (Table 2)

Table 2: EU member states compared to Competitiveness and Tourism Index in 2017

Country	Ranking	Shift from the year 2015
Spain	1.	0
France	2.	0
Germany	3.	0
United Kingdom	5.	0
Italy	8.	0
Austria	12	0
Portugal	14	1
Netherlands	17	-3
Sweeden	20	3
Belgium	21	0
Ireland	23	-4
Greece	24	7
Luxembourg	28	-2
Denmark	31	-4
Republic of Croatia	32	1
Finland	33	-11
Malta	36	4
Estonia	37	1
Czech Republic	39	-2
Slovenia	41	-2
Bulgaria	45	4
Poland	46	1
Hungary	49	-8
Cyprus	52	-16
Latvia	54	-1
Lithuania	56	3
Slovakia	59	2
Romania	68	-2

Source: developed by the authors, based on data from Travel and Tourism Competitiveness Index in 2017.

Including latter stated Spain, France, Germany, United Kingdom and Italy, which are in top 10 countries according to Competitiveness of travel and tourism index, Austria, Portugal, Netherlands, and Sweden need to be singled out because according to this indicator they are in top 20 countries. On the other hand, worst positions are achieved by Lithuania, Slovakia, and Romania which are in positions above 50'th place. Also, greatest decline according to this indicator has been achieved by Cyprus, Finland, and Hungary, while biggest progress has been made in Greece, Malta and Bulgaria.

Below is the more detailed analysis of Republic of Croatia's position according to Competitiveness of Travel and Tourism Indicator. Thereby indicators for the year 2007, 2009, 2011, 2013., 2015 and 2017 are included (Chart 1).

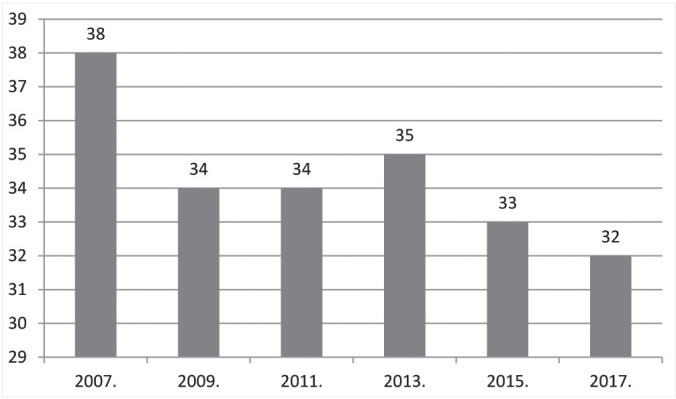

Chart 1: The Republic of Croatia's position according to the competitiveness of Travel and Tourism indicator in the period 2007 – 2017

Source: developed by the authors, based on World Economic Forum (1), (2), (3), (4), (5)

Data from this graph indicate that the Republic of Croatia's position, according to the competitiveness of travel and tourism, has been constantly improving. Thereby, the least favourable position was achieved in 2007, while in 2017 32'nd position was achieved. That indicates a continuation of improvement trend in this sector.

Below is the analysis of key subindexes and pillars of competitiveness of travel and tourism for Republic of Croatia considering the report from 2017. According to a Business environment indicator, Republic of Croatia has taken 114'th place with an average grade of 4,0. (Table 4).

Table 3: The Republic of Croatia's position considering the Business environment in 2017

Indicator	Rang
Property rights	107
Influence of rules on foreign foreign investment	108
Efficiency of Dispute Resolution Legislation	**132**
Time needed to issue building permits	*57*
Costs of issuing building permits	**120**
Market domination	105
Time Necessary to start a business	*40*
Start-up costs	69
Effects of Employment Taxation	**132**
The Effects of Taxation on Investing	**130**
Total tax rate	*14*

Source: developed by the authors, based on data from Travel and Tourism Competitiveness Index in 2017.

In a segment of the Business environment, as most favourable areas are noted total tax rate, time necessary to start a business, the time needed to issue building permits. On the other hand, most unfavourable areas are the efficiency of dispute resolution legislation, effects of employment taxation and investing and costs of issuing building permits

Considering the indicator of Protection and security Republic of Croatia has taken 24'th place in the year 2017 with an average grade of 6,1 (Table 4).

Table 4: The Republic of Croatia's position according to Protection and security indicator in 2017

Indicator	Rank
Business Costs Due to Crime and Violence	19
Reliability of police protection	49
Business Costs of Terrorism	13
Terrorism Frequency Index	51
Murder rate	20

Source: developed by the authors based on data from Travel and Tourism Competitiveness Index in 2017

The Republic of Croatia has the most favourable ranking in the area of business costs of terrorism and business costs due to crime and violence. On the other hand, as the most unfavourable areas are emphasized terrorism frequency and index reliability of police protection.

Concerning area of Health and hygiene, Republic of Croatia has taken 19'th place in 2017 with an average 6,4 grade (Table 5).

Table 5: The Republic of Croatia's position concerning Health and hygiene indicators in 2017

Indicator	Rank
Number of doctors	34
Access to health protection	44
Drinking water availability	43
Hospital beds	23
The incidence of HIV	1
The frequency of malaria	1

Source: developed by the authors based on data from Travel and tourism competitiveness index in 2017

In this segment, as key advantages of the Republic of Croatia are identified: inexistence of malaria and the low number of HIV cases. The most limiting factors are access to health protection and drinking water availability.

In the area of Human resources and labor market, Republic of Croatia has taken 85'th place in 2017 with the average grade of 4,4 (Table 6).

Table 6: The Republic of Croatia's position considering Human resources and the labor market in 2017

Indicator	Rank
Population included in primary education	106
Population involved in secondary education	55
professional training	120
Orientation towards consumers	73
Types of employment and dismissal of workers	124
The ease of finding skilled workers	106
The ease of finding workers from abroad	126
Wages and productivity	66
The share of women in the labor force	48

Source: developed by the authors based on data from Travel and Tourism Competitiveness Index in 2017

According to this pillar of competitiveness, Republic of Croatia has positive positions considering women participation in workforce and population involved in secondary education. On the other hand, problems have been acknowledged in finding the qualified workforce, employment practices, and layoffs, workforce professional training.

In the area of ICT readiness, Republic of Croatia has taken 47'th place in the year 2017, with average grade 5,0 (Table 7).

Table 7: Republic of Croatia's position considering ICT readiness in 2017

Indicator	Rank
Use of ICT for Business Transactions	81
Using the Internet in Business Transactions	84
Internet users	47
Broadband internet users	40
Cell phone users	92
Prepaid mobile users	37
Mobile network coverege	1
Quality of electricity supply	40

Source: developed by the authors based on data from Travel and Tourism Competitiveness Index in 2017

This area indicates the favourable position of Republic of Croatia concerning high GSM coverage, prepaid users' quantity, and electrical grid quality. On the other hand, ICT and internet in business transactions usage are still inadequate.

According to Priority of tourism and travel sector indicator, Republic of Croatia has taken 77'th place in 2017, with an average grade of 4,5 (Table 8).

Table 8: The position of the Republic of Croatia considering Priority of tourism and travel sector in 2017

Indicator	Rank
Prioritization of tourism and travel by the state	46
Efficiency of marketing in attracting tourists	38
Data integrity	32
Frequency of availability of tourism and travel information	28
Country Brand Strategy	105

Source: developed by the authors based on data from Travel and Tourism Competitiveness Index in 2017

Data from Table 9 shows that tourism carriers in the Republic of Croatia are dedicating relatively high attention to collecting and issuing data regarding tourism and tourism trends. Marketing activities have positive effects on attracting foreign citizens. Key problems are state finances and lack of branding strategy, which should represent the cornerstone of further tourism development and position in Croatia.

According to Openness indicator, Republic of Croatia has taken 26'th place in 2017 with an average grade 4,2 (Table 9).

Table 9: The Republic of Croatia's position compared to Openness in 2017.

Indicator	Rank
Visa regimes	73
Openness to Bilateral Services in Air Transport	48
Regional Trade Agreements	1

Source: developed by the authors based on data from Travel and tourism competitiveness index in 2017

In this section, total visa regime procedures are recognized as the biggest obstacle which refers primarily to visitors out of EU and Schengen space.

Concerning the Price competitiveness, Republic of Croatia has taken 100'th place in 2017, with an average grade of 4,4 (Table 10).

Table 10: The Republic of Croatia's position regarding Price competitiveness in 2017

Indicator	Rank
Taxes on airport charter flights	77
Hotel Price Index	77
Purchasing power parity	88
Gas prices	107

Source: developed by the authors based on data from Travel and Tourism Competitiveness Index in 2017

According to this indicator, based on tourists' perception, Republic of Croatia still belongs to more expensive countries with high fuel prices, low purchasing power parity, high fees in airports and expensive hotels. Areas listed are necessary to improve for achieving further competitiveness increase in tourism.

According to Ecological sustainability, Republic of Croatia has taken 21'st place with an average grade 4,7 (Table 11).

Table 11: The Republic of Croatia's position compared to Ecological sustainability in 2017

Indicator	Rank
Rigidity of environmental rules	50
Implementation of environmental regulations	55
Sustainability of tourism and travel	84
Concentration of particles	111
Ratification of environmental agreements	15
Water pollution	22
Endangered species	73
Changes in the forest cover	26
Disposal of waste water	44
Coastal endangerment	75

Source: developed by the authors based on data from Travel and Tourism Competitiveness Index in 2017

Data concerning environmental sustainability indicate low level of water pollution, changes in the forest cover and high level of environmental protection. High levels of particle concentration and endangerment of the coastal area are present.

Considering the aviation infrastructure, Republic of Croatia has taken the 52'nd position with an average grade 3,0 (Table 12).

Table 12: The Republic of Croatia's position compared to Aviation infrastructure in 2017

Indicator	Rank
Infrastructure quality	78
Available "seats" in domestic aviation	63
Available "seats" in foreign air traffic	83
Aircraft arrivals	49
Air traffic density	21
Number of airline companies	33

Source: developed by the authors based on data from Travel and Tourism Competitiveness Index in 2017

Un(quality) of infrastructure and lack of domestic and foreign flights is recognized as the key problem of air traffic, which largely effects the further connectivity Republic of Croatia with other world destinations.

Considering Land and naval infrastructure, Republic of Croatia has taken 46 the place with an average grade 3,9 (Table 13).

Table 13: The Republic of Croatia's position considering Land and naval infrastructure in 2017

Indicator	Rank
Roads quality	18
Roads density	51
Density of asphalted roads	38
Quality of railway infrastructure	64
Railway density	18
Harbour quality	45
Land transport efficiency	57

Source: developed by the authors based on data from Travel and Tourism Competitiveness Index in 2017

According to this indicator, Republic of Croatia has relatively favorable results, especially in the area of roads quality, railway density, and asphalted roads. Quality of railway infrastructure, roads density, and land transport efficiency are recognized as the key problem.

Considering Tourism service infrastructure, Republic of Croatia has taken the 5'th position with an average grade 6,3 (Table 14).

Table 14: The Republic of Croatia's position compared to Tourism service infrastructure in 2017

Indicator	Rank
Hotel rooms	11
Quality of tourism infrastructure	65
Presence of car rental service	1
Information availability	15

Source: developed by the authors based on data from Travel and Tourism Competitiveness Index in 2017

These results indicate the high quality of tourism services with an emphasis on accommodation capacities, information availability and travel organization opportunities. The stated situation is a consequence of growing investments (private and public) in all aspects of tourism in the last 10 years.

According to Natural resources, Republic of Croatia has taken 20'th place with an average grade 4,5 (Table 15)

Table 15: The Republic of Croatia's position considering Natural resources in 2017

Indicator	Rank
Involvement in the World Heritage List	46
Known species	87
Protected species	8
Digital Demand for Contributing Resources	8
The attraction of natural heritage	20

Source: developed by the authors based on data from Travel and Tourism Competitiveness Index in 2017

Indicators about natural resources indicate attractiveness and importance of natural resources in the total tourism offer in the Republic of Croatia. The country is abundant with big natural resources, preserved natural, protected species and other natural „resources "which constitute one of the foundations of Republic of Croatia's attractiveness as the tourism destination.

The Republic of Croatia has taken the 39'th position with an average grade of 2,8 according to Cultural resources and business travel indicator in 2017 (Table 16).

Table 16: The Republic of Croatia's position considering Cultural resources and business travel in 2017

Indicator	Rank
Inclusion of Cities on the World Heritage List	30
Intangible Cultural Heritage	5
Sports facilities (stadiums)	77
Number of international meetings and conferences	41
Digital demand for cultural and entertainment content	36

Source: developed by the authors based on data from Travel and Tourism Competitiveness Index in 2017

According to this indicator, the greatest advantage of the Republic of Croatia is intangible cultural heritage and inclusiveness of cities on world cultural heritage list (Split, Dubrovnik, Trogir, Poreč etc.). The Republic of Croatia needs significant efforts in building and restoring sports facilities and, as leading world metropolises have already done, put them in function as part of tourism activities.

Conducted analysis indicates very favourable tourism position of Republic of Croatia on a world scale. According to Competitiveness of tourism and travel scale position Republic of Croatia has constantly been advancing and has taken 32'nd place in 2017, which positions Croatia among tourism most competitive world countries. By analysing key pillars of the tourism competitiveness posi-

tive position of the Republic of Croatia has been established from an aspect of tourism services, health, and protection, natural resources, environmental sustainability, international openness, protection, and security. As previously stated, positive trends in these categories are the direct consequence of „historical heritage "and continuing investments.

However, Republic of Croatia has certain lag in the area of land and railway infrastructure, ICT readiness, prioritizing of tourism and travel. In this segment is necessary, primarily to define quality guidelines of tourism development (with existing) and to create foundations for its implementation. As the biggest limitation of further tourism development has been recognized unfavourable business environment, burdened with administrating and fiscal barriers which are slowing down future progress and improvement of Republic of Croatia's recognition as the tourism destination of EU. Therefore, established advantages and especially disadvantages must represent the foundation for future endeavours in the sector of tourism.

EFFECTS OF THE EU MEMBERSHIP ON THE COMPETITIVENESS OF CROATIA'S TOURISM

By joining EU, Republic of Croatia has gained an opportunity to participate in the Internal Market of the Union and to offer its services and resources to a large number of potential tourists from every part of EU. Also, tourism services providers must since 2013 face growing competition from more developed countries, which in the end has a significant effect on price and quality of tourism product.

However, in order to compete with well-established world destinations, the Republic of Croatia and other carriers of tourism activities must make a step forward, i.e. continue improving their offer and make it price and quality more competitive.

Vinko Kandžija and Igor Cvečić (2010) state that by joining the EU, operational standards are becoming stricter, which has a positive effect on consumer protection, quality of available resources and materials. The Republic of Croatia is still, compared to leading world tourist destinations, cheaper i.e more price competitive. In that case, the question emerges in which direction will further tourism development follow? *Does it include orientation and attempts of developing elite tourism or further orientation on some sort of mass tourism? In case of potential orientation on elite tourism, the question is are there, on the state level, participants capable of implementing such a plan into practice?*

Joining the EU and participating in the Internal market has enabled service providers using all advantages deriving from four freedoms which represent the foundation of all European economy. As the EU member, Republic of Croatia has been enabled to receive the free flow of tourists, without any restrictions which they had to face in past, which largely influenced on their total tourism turnover (Martina Belić and Josip Štilinović, 2013).

Relevant statistics point out that arrival of foreign tourists has increased just because of opportunity providing advantages resulting freedom of movement for workers. Such system enables Croatian tourists and tourism workers as well to freely move to other member states and implementation of observed good practices from these states in Croatian tourism sector. In this situation, marketing experts and other stakeholders that are in charge of branding republic of Croatia as the tourism destination can more freely promote Croatian beauties and thus make them globally available (Dean Križanić, 2017). Every EU member state can by itself decide on its development policies and ways of managing tourism sector. That situation offers an opportunity to carriers of tourism activities independency in determining strategic guidelines, VAT level, and other key tourism components. In this process, it is possible to ask EU institutions for guides and put in a good use practice of other member states (Ivo Kunst, 2012).

By previously conducted analysis, it has been pointed out that the Republic of Croatia, from the moment of it's joining the EU, has constantly been advancing according to relevant statistics of tourism competitiveness. Thus in the 2017 Republic of Croatia has taken 32'nd place by which it enters the group of the most competitive tourism countries of the world. The Republic of Croatia has significant capacities which enable improvement of existing position and further advancement concerning key indicators of tourism competitiveness.EU membership has been accompanied by an increase in tourists' numbers especially from traditional countries such as Germany, Slovenia, Austria etc. which is an exact result of a „borders opening "and possibility of free movement.

Increased number of tourists and achieved number of overnight stays has been accompanied by the increased number of accommodation capacity with an emphasis on all types of private accommodation. The Republic of Croatia has to encourage additional infrastructure investments to increase the quality of its offer. Also, in the purpose of (potential) orientation on elite tourism, it is necessary to increase hotel numbers, primarily 5-star ones and to ensure accompanying contents such as improving and create further conditions for developing a whole

year tourism. The Republic of Croatia, as EU member, has at its disposal large opportunities for using an available EU structural funds and other EU financial instruments which can be used to directly or indirectly foster tourism growth and sustainable development. Some of the most important instruments have been further analysed in the next section of this paper. It is possible by using available financial instruments to effect on the further advancement of tourism competitiveness with a special emphasis on infrastructure advancements and human resources advancements.

The known problem of Croatian tourism derives from the lack of qualified workforce and educational system shortcomings. Still, despite advancements according to key indicators of tourism competitiveness, this sector still has big problems and shortcomings. Therefore, it is necessary to point out focus on summer swimming season and the lack of accommodation facilities of the highest class. Biggest problems derive from shortcomings in infrastructure, especially roads and railroads, and current impossibility of its solution.

One of the key Republic of Croatia's resources, in conditions of increasing insecurities and terrorist threats, is having relatively safe surroundings. One of the reasons for the increased number of tourist visits derives from terrorist threats, which some of the world leading tourism destinations were exposed to. In these conditions, the large number of tourists have recognized Republic of Croatia's safety and decided to choose Croatia for their vacation.

It is possible to conclude that EU membership is moving borders and removing obstacles between population, contributing to the strengthening of EU sense of communion and cooperation. One of the sectors affected by these relations is exactly tourism. Further tourism development of the Republic of Croatia is largely affected by the quality of strategic planning and capability of the tourism sector carriers to implement defined measures into concrete effects.

MEASURES AND INSTRUMENTS FOR THE IMPROVEMENT OF COMPETITIVENESS OF CROATIAN TOURISM

By joining the EU, Republic of Croatia has faced challenges of inner market and increase of competitiveness in all aspects of the economy, including tourism. Therefore, Croatian tourism sector needs to define and implement quality measures and instruments which will enable further advancement of Republic of Croatia's recognition as the tourism destination.

The *Strategy of Republic of Croatia's tourism development* has been defined in the year 2013 and represents key development document which contains key principles, goals, and guidelines for developing Croatian tourism sector in the context of EU membership. The strategy has defined key limiting factors of the tourism sector and especially pointed out the quality and offer structure, investment climate, marketing and sales, human resources, quality management and complete legislative framework (Ministry of Tourism of Republic of Croatia, 2018). According to Strategy, Croatian tourism should be developing according to key developing principals: partnership, institutional deregulation, ecological development, „more than sun and sea "principle, whole special coverage of tourism, authenticity and creativity, „hotel business as key investment cycle initiator "focus, inventive market approach, production for tourism and culture of quality.

The principal of partnership implies narrow cooperation between all participants in tourism for a purpose of its development, while institutional deregulation must ease current limiting institutional factors. As previously said, Croatian tourism should move away from basic, traditional concept of having an offer based only on sun and sea, and develop more new types of tourism offers and with capital investments expand tourism to the continental area as well.

By promoting its authenticity and creativity Croatian tourism will differentiate from growing competition. In a purpose of further tourism development, it is necessary to start rebuilding and improving hotel infrastructure as well and adapt it to needs and wishes of contemporary consumers. Such approach will result in an international branding and improvement of small and medium entrepreneurs included in tourist movements. For a purpose of promoting own specifics the Republic of Croatia must focus local producers to „manufacture for tourism "and thusly present domestic quality which will have the direct impact on further positioning and improving Croatian's tourism competitiveness on the global scale.

Therefore, a vision of Croatian tourism is defined by a Strategy which consists of three key aspects (conception, operational and production) who answer three key questions:
1) How should tourism look like?
2) Which are key developing preconditions of Croatian tourism?
3) How will Croatian tourism attract attention?

Experts involved in defining the Strategy have given scientifically based answers on asked questions and concluded:

1. According to the conceptual aspect, Croatian tourism should have been recognizable, the whole year, territorially widespread i.e. developed on a whole territory, differentiated, inventive and flexible
2. According to the operational concept, key preconditions of Croatia's tourism development represent long-term environmental protection and space, sustainable management of natural resources, competitiveness and creation of favourable investment climate, activating state assets in a purpose of tourism development, increase of knowledge and competence on all levels and developed location management
3. According to a production concept, Republic of Croatia's tourism should be based on hospitality, quality, excellence, and safety.

Except for discretional goals, Strategy has defined key quantified goals among which needs to be pointed out:
1. Quality and structure increase of accommodation capacity through achieving hotels share in total accommodation of 18
2. Increase employment in tourism by creating an additional 20 thousand new jobs
3. Implementation of 7 billion Euros worth of investments
4. Achieving tourist spending of 14,3 billion euros per year.

Strategy structure and key quantitive goals with no doubt indicate it's connection to the key developing strategy of European economy i.e. strategy EUROPA 2020. Strategy Europa 2020 accepted in the year 2010 is a 10-year strategy which goal is to *„ make Europe fastest growing and the most competitive economy of the world based on knowledge until 2020".* The strategy includes the need for creating smart, sustainable and inclusive growth. (Kandžija and Cvečić, 2010). Smart growth includes the development of the economy based on knowledge and innovations, sustainable growth strives for the economy that efficiently uses resources, and inclusive growth is focused on creating the high level of employment which will contribute to social and territorial connectivity (Ministry of science and education of Republic of Croatia. 2010). The five major goals of the Strategy are defined in close connection with the main priorities focused on areas of employment, research and development, climate change and energy sustainability, education and fighting poverty and social exclusion (Ministry of science and education of Republic of Croatia. 2010). In the area of employment, the goal is to achieve employment rate higher than 75% of the population between 25-64 years of age. The goal of research and development means the realization of 3% GDP investments for activities of research and development until 2020. Area of climate change and energy sustainability is based on the realization of the

plan 20/20/20 i.e. lowering greenhouse gas emissions for 20% (or 30% if there are necessary conditions) compared to level from 1990, achieving 20% of total energy from renewable sources and increasing energy efficiency for 20%. As part of education, the anticipated rate of early school leaving is anticipated on the level below 10% and an increase of participation of people between 30-34 years of age with completed tertiary education to 40%. Poverty lowering and social exclusive goal demand lowering the number of people living in poverty and social exclusiveness risk for at least 20 million.

For a purpose of achieving priorities, EU has defined 7 key initiatives. Initiatives necessary for achieving smart growth are Innovation union (encouraging research and development investments and strengthening chain of innovations), Stimulating the youth (strengthening of the educational system and easier transition to the labour market) and Digital Agenda for Europe (applying of ICT and fast internet). In the area of inclusive growth Agenda for new jobs (employment, professional training and labour market modernisation) and European platform against poverty (social and territorial cohesion and inclusiveness) are being implemented, while priority of sustainable growth is achieved through Resource efficient Europe (fight against climate change, clean and efficient energy), Industry policy of globalisation era (creating better business environment and stronger industry foundations by ensuring higher level of competitiveness) (Ministry of science and education of Republic of Croatia. 2010). In the context of tourism development, the Republic of Croatia should primarily focus on goals which will enable promotion of innovation, education, employment and goals connected to areas of environment protection and realizing energetic efficiency.

This is the exact direction which Republic of Croatia's has taken by defining the Action plan of green tourism development, made by Tourism Institute. This Action plan goal is to improve proactivity and cooperation between all participants and to promote awareness of an ecological aspect of tourism and its effect on creating additional value in this sector. Action plan has defined two key action directions: 1) improvement of environmental sustainability of tourism and 2) improvement of tourism valuation of tourism heritage which will achieve lowering of the pressure on tourism and stimulate tourism growth which accepts the importance of natural heritage and contributes to its protection (Institute of tourism in Republic of Croatia. 2017).

In accordance with key aspects as key goals of the Action plan are determined: 1) improvement of sustainability, 2) improvement of environmental sustainability

on all levels of catering-tourist services providers and 3) Republic of Croatia's branding as a leader of sustainable tourism. As one of the initiatives derived from Action plan it is necessary to point out pilot project Green business in hotel industry developed by Croatian association of employers in the hotel industry in 2013. This project goal is to ensure and encouraging of implementation the principle of green business and sustainable development in the hotel industry and gradual expansion of good praxis and rules on other segments of tourist offer (Croatian association of employers in the hotel industry, 2017)

In a purpose of further increase of competitiveness of tourism of Republic of Croatia must increase activities in using financial capabilities available through structural and investment EU funds and other programs available on EU level such as European fund for regional development (EDRF), European social fund (ESF) and programs whose activities are directly or indirectly focused on tourism sector development, especially COSME, Horizon 2020, Creative Europe, Erasmus +, Life and Easi, Calypso. In a purpose of improving rural areas and developing tourism in these areas, Republic of Croatia has available financial instruments designed to encourage of agriculture, fishing, and other connected activities.

Calypso represents the only program on EU level that is focused exclusively on activities in tourism. The program has been established in 2009 with the core purpose of ensuring tourist exchange outside season on social level tourism. The program is focused on four key people groups: privileged young adults between 18 and 30 years of age, families facing financial and other pressures, disabled people and older than 65 and pensioners which can't afford to travel. Key program activities combine promotion of out of season tourism, ensuring opportunities and possibilities for lesser known places to get promoted among tourists across Europe and encouraging long-term employment in tourism (EuroPlan portal, 2017).

As part of ERDF following activities concerning tourism are being financed: 1) tourism connected to research, technological development and innovations, 2) development of ICT products for tourism, 3) development of innovative tourism services, especially in lesser developed and distanced areas, 4) development of high additional value of products and services in market niche (heath tourism, pensioners tourism, cultural and eco-tourism, gastro tourism, sport tourism) by mobilizing certain local resources, 5) dividing activities among different tourism activities and with creative industries, diversifying of regional tourism products and expansion of tourist season (European Commission (1), 2018).

Planned funds of European social fund for the Republic of Croatia in the period of 2014-2020 are around 1,5 billion euros and primarily focused on cohesion measurement, competitiveness and employment through two basic operational programs: 1) Operational program Competitiveness and cohesion and 2) Operational program Effective human resources (European Commission (2), 2018).

COSME is a program dedicated to small and medium entrepreneurs in program timeline 2014-2020 which has a budget of around 2,3 billion euros. The program is focused on strengthening of competitiveness of European companies and supporting employment with encouraging employment by encouraging favourable business environment. The special activity of the Program implies improvement of competitiveness and sustainability of companies in the tourism sector (European Commission (3), 2018).

HORIZON 2020 is an EU program for research and innovation for 2014-2020, defined for realizing key goals of strategic documents for innovations and technological development such as EUROPA 2020 and as support for implementing European research space. Total program's budget in the period of 2014-2020 is 78,6 billion euros. As key priorities of the Program, it is possible to point out Excellent science, Industrial leadership, and Societal Challenges. Social challenges category represents key area in which it is possible to intervene in further development and ensure sustainability of tourism concerning key strategic priorities: 1) Health, demographic changes, and life quality, 2) Food safety, sustainable agriculture, and forestry, sea, underwater, inner waters and bio economy research, 3) Safe, clean and efficient energy, 4) Smart, green and integral traffic, 5) Climate activity, environment, resources and ore efficiency, 6) Inclusive innovative and thoughtful societies and 7) Safe societies (European Commission (4), 2018).

Creative Europe is an EU program which has in 2014-2020 ensured 1,8 billion euros for creativity in the cultural and creative sector in a purpose of ensuring their contribution to achieving sustainable growth and employment (Ministry of the culture of Republic of Croatia, 2017). Considering the total impact of cultural content on the total tourism offer quality of Republic of Croatia, activity carriers should take measures to increase exploiting opportunities available through this Program (European Commission (5), 2018).

One of the ways for improving staff quality involved in the tourism sector is using the opportunities available through program ERASMUS + which is the biggest EU program for education, professional training, youth and sport, whose

budget for the current fiscal period is 14,7 billion euros. Generally, Program is „directed at strengthening knowledge and skills and employment of European citizens, also to improving education, professional training, and work in the area of youth and sport. It is especially directed to connecting education, professional training and youth sector with the business sector and is opened to their common projects (European Commission (6), 2018).

The tourism sector has also available the LIFE program, dedicated to areas of environment and climate activities with the key goal of implementing, updating and developing policies and legislation on EU level, co-financing projects which have European added value (European Commission (7), 2018).

Program for employment and social innovations (EASI) is a program dedicated to promoting the high level of quality and sustainable employment on EU level, guaranteed implementation, and worthy social protection, fight against social exclusiveness and poverty, improving working conditions. Total Program's budget in current fiscal period is 919,4 million euro (European Commission (8), 2018).

CONCLUSION

Competitiveness of Republic of Croatia's tourism is analysed in this paper with Index of tourism competitiveness and travel issued by World economic forum. According to this indicator, Republic of Croatia has taken in 2017. 32'nd position, which positions Croatia among most competitive countries in the world and indicates the further positive trend of improving national competitiveness. In that context, as key advantages of Croatian tourism are recognized: tourism services, health, and protection, natural resources, environmental sustainability, international openness, protection, and security. On the other hand, Croatian tourism demands certain improvements in the area of land and railroad infrastructure, ICT readiness and prioritizing of tourism and travel. The recognized situation represents the foundation for implementation of basic reforms in the tourism sector.

By EU membership, Republic of Croatia has gained a chance to participate and do business on Internal market and use its advantages. By entering European economic system, Croatian tourism is facing growing competition which represents growing challenges for carriers of tourist activities to improve quality and realize price competitiveness. Further, Republic of Croatia's joining the EU resulted in

the increase in arrivals of foreign guests, increase in a number of overnight stays and generally larger total tourism income. Increased tourist activity results in improvement of quality and number of accommodation facilities which in the end effects total economy growths and employment. As EU member, Republic of Croatia has an opportunity of using EU financial funds which promote further growth of tourism.

Further improvement of Republic of Croatia's tourism, as an EU member, represents burning issue which needs special attention by economic and political activity carriers. One of the key steps for Croatian tourism is made by defining the Strategy of tourism development of Republic of Croatia until 2020. The strategy is accompanied by the list of action plans and measures which aim the improvement of current state and positive effect on economic growth and employment. With defined national strategies and guidelines, Republic of Croatia has a possibility of using a large number of EU financial instruments with a purpose of improving quality of tourist offer and human potentials.

Republic of Croatia's tourism should turn to realize goals of sustainability i.e. growing connections between environmental protection goals and economic competitiveness, what is as priority stated in key developing EU strategies. Tourism carriers must start to further improve infrastructure, accommodation facilities, education, and strengthening information – communicational foundations of tourism in a purpose of achieving recognition on the international level.

By conducted research, positive effects of EU membership on the development of Croatian tourism are proven. The Republic of Croatia is achieving progress according to key indicators of tourist competitiveness and realizing positive trends in almost all parts of tourism activities. The stated situation represents a challenge in conducting thorough reforms, the increase of quality and further positioning on global tourist market.

Scientific contribution of this research is based on complete analysis of the competitiveness of travel and tourism of Republic of Croatia, by which are identified key advantages and disadvantages. Further, based on conducted analysis, in this paper has been conducted formulation and synthesis of effects from Croatian EU membership on competitiveness and development of Croatian tourism. Scientifically based results of the research have made a foundation for defining key measures of improving the competitiveness of Croatian tourism sector and determination Croatian tourism development perspective as an EU member.

Further research should be directed on quantifying the effects, by using relevant statistic tools, EU membership on the tourism sector and its effect on key macroeconomic aggregates (economic growth, unemployment, employment, minimal wages etc.). Also, future research should be directed on scientifically based predictions of future trends in the tourism sector of the Republic of Croatia as an EU member, taking into account the effects of globalization and global market movements.

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PREGLEDNI NAUČNI RAD / OVERVIEW SCIENTIFIC PAPER

A MODEL OF MANAGING THE URBAN MOBILITY PLANNING PROCESS

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Abstract: *The subject of research in this paper is the planning of urban mobility development in the narrow part of Sarajevo using a model based on the growth matrix. The hypothesis of this research is: Based on the analysis of supply and demand of the city traffic system, good practices in sustainable urban mobility and existing strategies and development plans, a model for managing the whole planning process of sustainable urban mobility of the city traffic system in Sarajevo by 2026 can be proposed.*

In accordance with the experience of Europe's main urban mobility observatory (Eltis) and sustainable urban mobility plans (SUMPs), the key elements are defined. The next step, after defining the elements of urban mobility, is to carry out the quantification of elements for 2016. Thereafter, there is a concise explanation of the growth matrix and model of managing the urban mobility planning process is created. In the research results, direct and indirect growth rates were elaborated and analyzed, i.e. the individual and synergic effects of the model. Finally, the synthesis of the research results was presented.

Keywords: *model, growth matrix, sustainable urban mobility, planning process.*

JEL: *R41, R42, R51*

INTRODUCTION

The traffic system and the socio-economic environment are dynamic systems whose mutual action results in mobility. Economic efficiency and the level of development largely depend on the level of mobility in a city. Therefore, urban mobility needs to be constantly and strongly directed not to lag behind the needs of total development, so that it does not become its brake over the time.

The deterioration of traffic conditions associated with the expansion of urbanization and increased motorization has a negative impact on the economy of large cities. The pressures on urban transport systems are increasing as part of the process of growth. Motor vehicle ownership and use are growing even faster than population, with vehicle ownership growth rates of 15 to 20 percent per year common in some developing countries. The average distance travel per vehicle is also increasing in all but the largest, most-congested cities like Sarajevo. This growth exceeds the ability to increase road space, and the major impediment to the efficient working of the urban economies in large-size cities, and particularly in megacities, is the level of road traffic congestion. Travel speeds are decreasing and the travel environment for pedestrians and people-powered vehicles is deteriorating. In the narrow part of the city during the rush hours, traffic speeds are reported to average 20 kilometers per hour (km/h) or less in Sarajevo. Also, traffic congestion has a negative impact on the competitiveness and environment of urban economies; it causes inefficiencies in logistics operations and increases costs. The costs of the 'first' and 'last mile' of supply chains are too high and present a barrier to growth of home delivery. Urban logistics is heavily neglected in city and transport planning.

For that reason, urban mobility planning processes are now essential if we want the transport service of passenger and goods to meet the needs of entrepreneurs and residents of urban/suburban areas. This include enabling social equity, urban accessibility, economically suitable transport costs and enabling tolerable life and development of urban environment by limiting the production of negative aspects of the transport system (congestion, pollution, noise, low level of traffic safety, etc.). In this way, it strives to create the ideal harmony of all supply and demand aspects in order to achieve the urban mobility for all users of city transport services.

The subject of the research is the planning of urban mobility development in the narrow part of Sarajevo by applying a model based on the growth matrix.

The hypothesis of this research is: Based on the analysis of supply and demand of the city traffic system, good practices in sustainable urban mobility and existing strategies and development plans, a model for managing the whole planning process of sustainable urban mobility of the city traffic system in Sarajevo by 2026 can be proposed.

The first thing to do is to define the elements of sustainable urban mobility and

carry out an analysis of supply and demand for city traffic services. The next step is to carry out the quantification of elements for 2016 (by adapting the Urban Mobility Index 3.0 for Sarajevo). Thereafter, there is a concise explanation of the growth matrix and model of managing the urban mobility planning process is created. In the research results, direct and indirect growth rates were elaborated and analyzed, i.e. the individual and synergic effects of the model. Finally, the synthesis of the research results was presented.

DEFINING AND ANALYSIS OF SUSTAINABLE URBAN MOBILITY ELEMENTS

The traffic system and socio-economic environment are dynamic systems whose mutual action results in traffic mobility. Economic efficiency and level of total development largely depend on the level of traffic development. Cities are places for the exchange of goods and information which are at the heart of our economy and way of life. For cities to be successful they need to optimise the exchange of goods and information while remaining attractive places to live and work. Therefore, urban mobility needs to be constantly and strongly directed not to lag behind the needs of total development, so that it does not become its brake over the time.

The goal of urban mobility is to create a sustainable transport system in cities by: ensuring availability of jobs and services to all; improvements in safety and protection; reduction of pollution, greenhouse gas emissions and energy consumption; ***increasing efficiency and cost-effectiveness in the transportation of people and goods***; increasing the attractiveness and quality of the urban environment.

In order to determine the values for individual segments of a model of managing the urban mobility planning process (for the Sarajevo area), it is necessary to analyze the current state of supply and demand of certain urban mobility criteria (elements). The demand for the people and goods movement in urban mobility implies total requirements for the movement service that users and entrepreneurs want to achieve at a certain price and at a certain timeframe with an enabled availability across the territory with continuous/additional transportation. Demand for movement occurs in places of habitation and permanent residence, or in touch-points of intercity/international and urban transport which are spatially and temporally distant from the place of daily activities (business, shopping, school, hospitals, recreation, tourist attractions, shopping centers and etc.). The traffic supply considers the offer of the capacity and the possibility of pedestrian

movement and various means of passenger transport and all subsidiary means necessary for carrying out the transport process. [Mustafa Mehanović, Nermin Palić, 2018]

According to the experience of Eltis and SUMP, the following elements are defined: **infrastructure, suprastructure, flows of passengers and goods, speed and travel/transport time, traffic safety, urban access regulations, environment impact and organization (integration) of transport services**.

In this paper, research on the traffic system supply and demand services in the area of Sarajevo has been carried out.

INFRASTRUCTURE

High-quality transport infrastructure is the basis of the traffic offer in achieving the best urban mobility. The quality of the traffic offer is characterized by the length and density of the traffic network. Traffic road length is an indicator of the connection between the two ends of the travel, while the network density should enable coverage of the entire urban and rural area of the city in order to obtain a satisfactory coefficient of movement for citizens [Mehanović, Palić, 2018]. In addition to the length and density, it is also necessary to emphasize the infrastructure adaptation for different modes of transport and for all types of users.

The length of the traffic network infrastructure in Sarajevo is 793 *km.* [Federalni zavod za programiranje razvoja (FZPR), 2016:64] If we exclude bus, minibus and trolleybus lines (because they are moving along the traffic network used by personal/commercial means of transport), the total length of the separated infrastructure in the urban public transport (UPT) is 107.1 km (90.8 km – A 44 km, B 46 , 8 km of tram,[Ministarstvo saobraćaja Kantona Sarajevo (MSKS), 2014:6] 14 km of bicycle, [Gradska uprava Grad Sarajevo (GUGS), 2017] 0.14 km of angled elevator [MSKS, 2014:6] and 2.16 km of cable car length [CETEOR, 2017]). The quality of the city's service increases if the network density is bigger, i.e. if the number of network *km* per m^2 of the city surface is higher. Approximately, for the central parts of the city, the network density amounts 3-6 (km/km^2), and outside the central parts of the city about 1,5-3 (km/km^2). The network density for the central parts of Sarajevo is 3,68 (km/km^2), [Mehanović, 2011:308] which according to the standards meets the minimum criteria for coverage of the urban area of the city. Outside the central parts of the city, network density is 1,02 (km/km^2), whereby the minimum coverage of these parts is not met.

The width of the traffic lanes in Sarajevo is 3-3,5 *m*, which is in accordance with Highway Capacity Manual (HCM). At the section Skenderija to Baščaršija, the number of lanes varies from 2-3, where one of them is always in use for the trams, which affects the reduction of the flow rate and the deterioration of the transport service level.

According to existing projects, certain disadvantages in the infrastructure are being sought to compensate by: finalization of longitudinal, transversal and urban highway construction in Sarajevo, extension of the tram network (Ilidža-Hrasnica), reconstruction of the existing tram network and finalization of the planned bicycle route.

Suprastructure

In its property JKP GRAS Sarajevo has a total of 67 trams. It's a pretty outdated fleet: ČKD Tatra K2 (49 for sitting/108 for standing) from the 1970s and 1980s, and several newer compositions were introduced: Düwag, LHB (9G i 10G), Lohner (38 for sitting/73 for standing) and ČKD Pragoimex (Satra II i III). JKP GRAS also has a total of 39 trolleybus: MAN SL 172 HO (38 for sitting/68 for standing), MAN SG 200 HO (50 for sitting/126 for standing), NAW HESS BGT 5-25, NAW HESS BGT 5-25 (2)). [JKP GRAS, 2017] The bus traffic in Sarajevo counts 56 units and 25 minibuses (JKP GRAS). It is also necessary to consider the 45 buses that City of Istanbul and their urban public transport company «IETT» donated to JKP GRAS. [Ministarstvo prostornog uređenja, građenja i zaštite okoliša Kantona Sarajevo (MPZKS), 2017] The number of taxi drivers (TA table, valid driver license, valid vehicle license, valid taxi sign contract) is 908 out of which 813 physical and 95 legal persons, what is more than enough for the Sarajevo area.

It can easily be concluded that in Sarajevo a UPT fleet needs to be modernized: purchase of light rail trams, environment friendly buses, implementation of freight trams, etc.

Flows of passengers and goods

Traffic flow is the interactions between travellers (including pedestrians, cyclists, passengers, goods and vehicles) and infrastructure (including highways, signage, and traffic control devices), with the aim of understanding and developing an optimal transport network with efficient movement of traffic and minimal traffic congestion problems.

Based on PGDS data, the main city road has about 33,000 vehicles per day on average, and the heavily loaded sections are Alipašino Polje, Otoka, Pofalići and M. Dvor. [NTSI-INSTITUT, 2016] The number of passengers transported by UPT in 2011 was about 113 million and in 2015 about 95.9 million. During the analyzed years, the number of passengers transported by UPT is constantly decreasing. [Federalni zavod za statistiku (FZS), 2016] The number of individual vehicles is linearly increasing from 2013 to 2016. (for 126.018 vehicles) justifying the depopulation of UPT. However, if we take into consideration that an individual vehicle transports an average of 2 passengers, a number of trips on the most loaded road section with an individual vehicle are approximately 68.5 thousand passengers, which would amount to about 2.1 million passengers for one month, and for the year around 24.7 million. That is almost four times less than the amount of passengers transported by UPT, and almost twice as much the amount of passengers transported by tram.

When we look at freight transport, 34.000 *tons* of goods were transported in 2016 and the mileage of the vehicles was about 5.8 million *km*, while the *tons kilometers* are around 49.6 million. [FZS, 2016] This amount of passengers and goods flow creates great congestion on all city traffic roads.

There are two organization proposals to reduce the load on the city road that relies on the integration of passengers and goods flow in the existing urban transport systems. First solution is to design a shared public transport network ensuring a shared movement of passengers and goods in urban environment. Second solution is to develop consolidation centers and cross-docks for freight movement and hubs for passenger and freight delivery and collection. [Trentini, Malhene: 2012:807]

There is also a solution that is related to the use of alternative roads based on the application of information technologies and intelligent transport systems. The goal is to relieve main city arteries to ensure safe, uninterrupted and continuous flow of vehicles

Speed and travel/transport time

Speed limit at the main city artery in Sarajevo is 60 *km/h*. During the peak load on the same section, the average movement speed varies from 20 *km/h* to 30 *km/h*, with driving time in relation to the normal traffic load is almost three times longer and the service level becomes F.

When traveling on a tram, the problem occurs in unadjusted tram stop position (before the intersection), then the option of buying a ticket from a driver, whereby the travel time is prolonged, and due to the small distance between the stops and because of the safety reasons, the speed of movement decreases.

Higher speed and shorter travel time can be accomplished by the implementation of public transport priority systems (PTPS). PTPS are an important measure to increase the efficiency of urban traffic management. [Franco, Biora: 2018] It makes public transport more attractive due to service regularity, gain in commercial speed and travel time, reduction of pollution and rational use of energy. The best results of the system priority implementation are expected to be for services operating in protected lanes. Strategies for absolute priority may apply to services operating in reserved lanes, but situations where many services share the same reserved lanes, or where emergency vehicles or taxis can use lanes reserved for public service, have to be handled separately through strategies for high (but not absolute) priority provision. For services which operate in mixed lanes with private traffic, strategies which can reduce the number of stops at traffic signals and the time spent in queues are relevant. In addition to implementing PTPS, the use of ITS and IT systems contributes to increasing speed and shortening the travel time.

Traffic safety

Traffic safety is one of the basic goals of the SUMP. Most often it is reflected by the number of traffic accidents with different consequences: killed, injured and material damage.

The total number of traffic accidents in Sarajevo in 2016 was 11.367, out of which 901 were killed/injured (21 killed, 199 heavily injured and 1.020 slightly injured) and 10.466 with material damage. [BIHAMK: 2016] According to this data, the largest number of traffic accidents in the Federation of Bosnia and Herzegovina occurred in 2016 in the Canton Sarajevo area, with a percentage share of about 38.56%.

In order to improve the road safety situation in Sarajevo, the road safety strategy for the Sarajevo Canton has been adopted for the period 2016-2020 with plans and suggestions for improvement based on the results of Decade of Action for Road Safety 2011-2020.

Urban access regulations

In order to reduce congestion within the city centers and achieve sustainable mobility, an effective traffic control system should be defined when entering the city core area. Local decision makers need to prioritize the use of urban space according to their local needs and circumstances. *The Traffic Regulation Act in the Sarajevo Canton* has briefly defined the traffic restrictions and prohibitions (Article 6). However, this Article is not fully explained, which is why it is not adequately implemented. Another reason for the failure of this Article is that there are no adequate solutions that will offer an alternative to individual and freight vehicle drivers or stimulate them to use public transport/city cargo (for trams).

Solutions which may contribute to the implementation of this restriction measure are the existence of the Park & Ride system and the congestion charging systems for entering the urban center, and also for freight transport, the existence of a city cargo system (for trams). An example of good practice is the finalization of a project for controlling access to the nearby Old Town of Sarajevo. For this purpose, Stari Grad Municipality has set up submersible and fixed pillars to control the traffic of the vehicles.

Environment impact

The continuous increase of vehicle fleet in cities along with the development of road transport networks has resulted in a wide range of negative impacts. It refers to environmental impact, expressed as Greenhouse Gas Emissions, raw materials depletion, energy and fuel consumption or disruption of ecosystem equilibrium, social impact, expressed as the quality of people life, human health, and economic impact, expressed as economic growth.

Significant influence on air quality in Sarajevo has the traffic sector. The reasons for increased traffic air pollution are: a large number of vehicles, insufficiently strict regulations for car control, inadequate vehicle maintenance, poor quality inspection of vehicle emissions, unstructured infrastructure, lack of efficient traffic regulation on existing traffic routes (traffic jam emits a higher amount of polluting substances), inadequate UPT, lack of parking spaces, low-quality fuels etc.

Today the regulations limit the emission of the following components: carbon monoxide (CO), nitrogen oxides (NOx), uncombusted hydrocarbons (HC), carbon black (particles) and smoke in diesel engines and sulfur dioxide (SO_2).

According to the available data, the emission of exhaust gases in the Sarajevo

Canton is: SO_2 15 tons/year, NO_X 2.935 tons/year, CO_2 744.263 tons/year, CO 37.737 tons/year and PM10 220 tons/year. [MPZKS, 2015]

The number of registered vehicles in Sarajevo is 126.018, of which 27.222 are older than 15 years, 39.781 are 11-15 years old, 28.703 are 6-10 years old, 9.295 are 3-5 years old, 2.789 are from 1-2 year old and 2.798 are only 1 year old. From this age structure, it is easy to conclude that in Sarajevo runs a large number of old vehicles that release large amounts of exhaust gases. [FZS, 2016]

The Traffic Regulation Act in the Sarajevo Canton has shortly defined the traffic restrictions and prohibitions (Article 6), which also includes a traffic ban to reduce emissions of harmful gases.

There are some efforts to reduce the negative impacts of traffic on the environment, such as: the ban on the import of used vehicles (EURO standards), the proper implementation of "eco-testing" on vehicle technical inspection, the restriction of entry into the core of the city and promotion of other modes of movement (use of UPT, bicycles or the use of ecofriendly vehicles - urban gas buses and implementation of car sharing system).

Organization (integration) of transport services

The integration of transport services is a way of coordinating the use of several types of public mass transport carried out by various operators (including the connection to individual automobile transport) in order to ensure the purposed and cost-effective traffic coverage of the desired area from the point of view of the economic and non-economic needs of persons and institutions covered by the system. It is also necessary to point out the organizational integration (e.g. coordinated timetables; metropolitan tickets for different transportation modes) and economic integration focused on introduction of different measures supporting sustainability and efficiency of the public transportation systems (e.g. integrated tariffs). There are many different modes of urban transport: bus, tram, trolleybus, metro etc. Companies most often work independent of one another, they are even often in competition, as is the case in Sarajevo (JKP GRAS and Centrotrans Eurolines) since 2013.

The prices of transport are aligned with all modes of UPT in the city under a unique tariff system. Ticket validation is not harmonized and there is no unique ticket for all modes of transport.

The arrangement of the terminus and stops is made so that it is possible to change the line or the mode of transport, for example: Ilidža (bus/tram), Dobrinja (city bus/trolley/public bicycle /international flights), Otoka (city bus/tram/trolley/public bicycle/taxi), railway-bus station (city bus/minibus/tram/intercity bus/train/taxi), Skenderija (tram/trolley/public bicycle), Park stop (city bus/minibus/tram/public bicycle) and Ciglane market (city bus/minibus/trolley).

The timetables are aligned so that in most of the urban areas there is no waiting time of more than 10 minutes. The exceptions are the bus and train station (waiting time is 12-25 minutes), on the peripheral parts of the city and suburban settlements (waiting time is 30 min-1h) and at the airport (waiting time is about 1 hour).

In Sarajevo increasing road space to accommodate greater car usage is not an option. Optimising the efficient use of existing road space is therefore a key principle to appraise the requirements of competing users. The first thing to do is to integrate urban transport operators to complement each other, and not to be a competition. The coordination of cycling and walking with public transport in Sarajevo needs to be done. The benefits are mutual, encouraging more bicycling and walking as well as more public transport use. The more popular is the implementation of car sharing services. This new mobility solution is not going to cover the main part of the citizen's trips, but it will provide the key to less car ownership and in aggregate less car use.

Also, several solutions have been mentioned in the section 1.3., which refers to the integration of passengers and goods flows in the existing urban transport systems.

FORMULATING A MODEL OF MANAGING THE URBAN MOBILITY PLANNING PROCESS

In this paper, for modeling, we have chosen the growth matrix. [Stojanović, 1988] The reasons for the application are multiple, and mostly because of the inability to show the relations between the growth of elements through direct growth rates. Based on direct growth rates, it is not always possible to prove exactly which element is developing faster in absolute and relative terms, given the different initial values. Therefore, it was necessary, in addition to direct, also to introduce indirect growth rates, through which we can observe more complex relations between elements, i.e. more precisely to determine the absolute and relative growth rates as well as the relationships between the mobility elements.

Thus, the matrix allows all relations within the urban mobility system to be included at the same time.

It is assumed that the sustainable urban mobility system consists of n mutually dependent elements. With y_{it} and $y_{i,t-1}$ is marked the value of the element (i.e., input, parameter, etc.), of the i element (i = 1,.....,n) in the period t and t_{-1}.

The growth input value of the i urban mobility element is:

$$\Delta y_{it} = y_{it} - y_{i,t-1}$$

where is:
y_{it} and $y_{i,t-1}$ the value of the i element of urban mobility (i = 1,.....,n) in the period t and t_{-1}

The indirect growth rate of the i element of urban mobility in relation to the j is defined as the ratio of the input growth of the i element of urban mobility, Δy_{it}, and the values of the j element of urban mobility in the period t, respectively:

$$r_{ijt} = \frac{\Delta y_{jt}}{y_{jt}} \quad i,j = 1,..., n. \quad y_{i,t-1} \neq 0$$

Indirect growth rates can be expressed in the form of matrix growth of the urban mobility elements:

$$R_t = \begin{matrix} r_{11} & r_{12} & \dots & r_{1nt} \\ r_{21} & r_{22} & \dots & r_{2nt} \\ \dots & \dots & \dots & \dots \\ r_{n1t} & r_{n2t} & \dots & r_{nnt} \end{matrix}$$

$t = 1,..., T.$

where the elements on the main vertical indicate direct ($i = j$) and the other ($i \neq j$) indirect growth rates.

Elements in i line indicate the inputs growth in the i element of a model of managing the urban mobility planning process compared to the inputs in other elements. The elements in i column mark the growth of the inputs values in all the elements of the model in a relation to the input of the i element in the period t.

From above mentioned it can be concluded that each element in growth matrix is represented in one row and one column, with elements expressing indirect or

relative growth relations. Thus, for example, in the first row, the input the growth of the model first element in relation to the other elements is indicated, and in the first column, the growth of other elements in relation to the input of the first element. The other rows and columns match the other elements of the model of managing the urban mobility planning process.

The growth matrix can also be determined by the external vector of the model elements. This method is useful for practical calculation of the growth matrix. The growth vector of the model of managing the urban mobility planning process:

$$\Delta y_{it} = (\Delta y_{it}, \dots \Delta y_{m,t})$$

and vector of reciprocal values of the elements of the model of managing the urban mobility planning process:

$$\frac{1}{y_t} = \left(\frac{1}{y_{1t}}, \dots \frac{1}{y_{nt}}\right) \qquad i,j = 1,\dots,n$$

The external growth vector of the model elements coefficients and vector of reciprocal values defines the growth matrix model of managing the urban mobility planning process.

$$R_{pt} = \Delta y'_t \left(\frac{1}{y_t}\right) = \begin{bmatrix} \Delta y_{1t} \\ \Delta y_{mt} \end{bmatrix} \left(\frac{1}{y_t}, \dots, \frac{1}{\Delta y_{nt}}\right)$$

$$R_{pt} = \begin{bmatrix} \frac{\Delta y_{1t}}{y_{1t}} & \cdots & \frac{\Delta y_{1t}}{y_{nt}} \\ \cdots & \cdots & \cdots \\ \cdots & \cdots & \cdots \\ \frac{\Delta y_{mt}}{y_{1t}} & \cdots & \frac{\Delta y_{m1t}}{y_{nt}} \end{bmatrix} = \begin{bmatrix} r_{11t} & \cdots & r_{1nt} \\ \cdots & \cdots & \cdots \\ \cdots & \cdots & \cdots \\ r_{m1t} & \cdots & r_{mnt} \end{bmatrix}$$

Quantification of criteria (elements) for evaluation

Quantification of the model of managing the urban mobility planning process arises from the analysis of supply and demand, good practices in sustainable urban mobility, future strategies and development projects and other qualitative researches, by transforming the qualitative values of mobility elements into a numerical form (1 to 100).

Evaluation of model elements takes in consideration the synergistic effect of the following aspects:

- aspects of good practice for individual model elements,
- the values of the model elements in the period analyzed in the research (actual situation in 2016). The analysis is based on the following sources: The Directorate for Roads in Sarajevo Canton, Federal Bureau of Statistics, Federal Institute for Development Programming, Sarajevo Canton Planning Department, Ministry of Spatial Planning, Construction and Environmental Protection of Sarajevo Canton, Ministry of Transport of Sarajevo Canton and others;
- the assumed values 2021., when certain activities from the adopted strategies, that include the key urban mobility principles, are expected to be completed (such as the Traffic Safety Strategy for the Sarajevo Canton 2011-2020, Transport Strategy of the FBiH, Strategy for the Development of the City of Sarajevo 2012-2020), along with the second phase of IPA funds[1] and BiH gaining EU candidate status,
- the assumed values 2026. (when negotiations between BiH and EU are expected to be completed and the Treaty of accession is expected to be signed. The projects significant for urban mobility are also expected to be finalized in 2026 (such as harmonization of existing FBiH legislation with EU directives, final construction of bypass roads in major cities, implementation of road safety strategy, stimulation of new and more environmentally friendly vehicles in urban transport, development of information systems for passengers and transport companies etc.)).

The quantification of the model elements is based on the adaptation of the Urban Mobility Index 3.0 [Centre for Economics and Business Research (Cebr), 2017] for Sarajevo. The index scores cities using 27 indicators to assess mobility in urban areas according to 'maturity' (includes indicators such as modal split, transport infrastructure and existing transport initiatives that aim to improve mobility), 'innovativeness' (looks at transport sharing schemes, mobility-as-a-service platforms and autonomous vehicle initiatives) and 'performance' (considers, among other things, air quality, accident rates and travel time to work or transport time to final consumer). [Van Audenhove, Rominger, Korn, Bettati, Steylemans, Zintel, Smith, Haon, 2017] Quantification results are given in Table 1.

[1] Instrument for Pre-Accession Assistance (IPA) with at least EUR 314.9 million intended for Bosnia and Herzegovina in the period 2018-2020.: <http://europa.ba/?p=58190>

Table 1: Quantification of sustainable urban mobility elements

SUSTAINABLE URBAN MOBILITY ELEMENTS	Input y_{it}			Growth
	2016.	2021.	2026.	$\Delta y_{i,2026}$
Infrastructure	50	70	90	40
Suprastructure	40	50	70	30
Flows of passengers and goods	40	60	80	40
Speed and travel/transport time	40	50	80	40
Traffic safety	30	40	80	50
Urban access regulations	20	50	50	30
Environment impact	30	50	70	40
Organization (integration) of transport services	20	40	70	50

Source: Authors

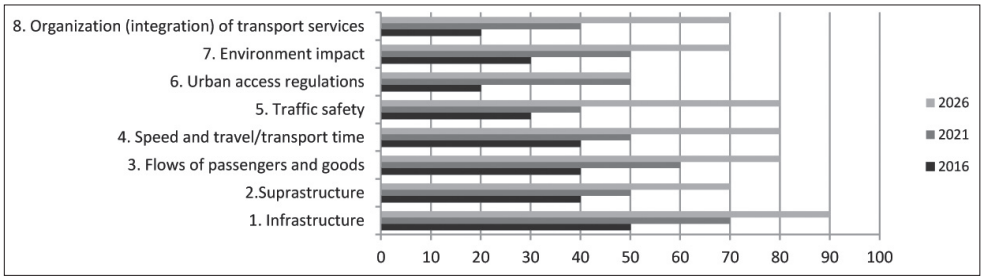

Chart 1: Display of elements of the model of managing the urban mobility planning process

Source: Table 1.

When we look at Table 2 and Chart 1, the growth vector of sustainable urban mobility is interpreted as an external vector $\Delta y_{i,2026}$. The product of external vector $\Delta y_{i,2026}$ and reciprocal values predicted for 2026 $1/y_{2026,}$ determines the growth matrix of sustainable urban mobility in relation to the current state.

Evaluation results (direct and indirect growth rates)

After implementation of the growth matrix model procedure, we get the model growth rates in the observed area (Table 2). Model elements are mutually dependent and their trends should be viewed simultaneously through direct and indirect growth rates. The matrix of growth is characterized by the expression of the relationships of different elements through the corresponding rows and columns in which the synergic effects of the model are shown. Each row or column of the growth matrix express the relation of one element to the other elements, including the parameters (outputs) that express the direct growth rates, i.e the individual effects of the model.

Table 2: Matrix – growth rates of the model of managing the urban mobility planning process

	Infrastructure	Suprastructure	Flows of passengers and goods	Speed and travel/ transport time	Traffic safety	Urban access regulations	Environment impact	Organization (integration) of transport services
Infrastructure	44%	57%	50%	50%	50%	80%	57%	57%
Suprastructure	33%	43%	38%	38%	38%	60%	43%	43%
Flows of passengers and goods	44%	57%	50%	50%	50%	80%	57%	57%
Speed and travel/ transport time	44%	57%	50%	50%	50%	80%	57%	57%
Traffic safety	56%	71%	63%	63%	63%	100%	71%	71%
Urban access regulations	22%	29%	25%	25%	25%	40%	29%	29%
Environment impact	44%	57%	50%	50%	50%	80%	57%	57%
Organization (integration) of transport services	56%	71%	63%	63%	63%	100%	71%	71%

Source: Authors

This model introduce a new theoretical approach that encompasses the relative changes of the elements and connects the elements of the model of managing the urban mobility planning process into a complete dynamic motion system. Evaluation of these elements resulted in direct rates for the period 2016-2026. (Chart 1.). Due to the limited space, only one indirect growth rate will be elaborated in this paper.

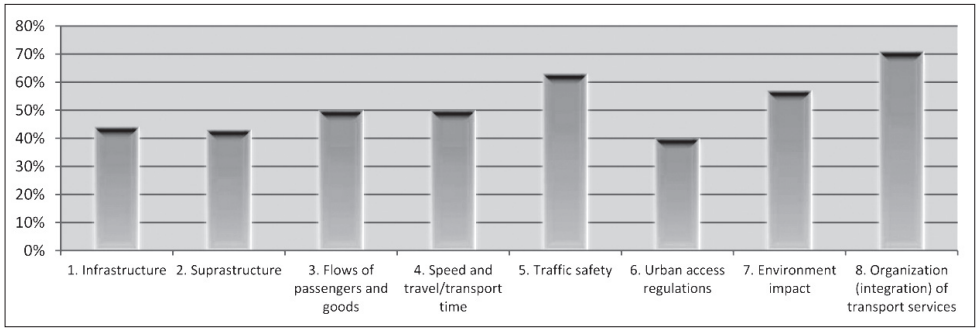

Chart 2: Display of the direct growth rates of the model in 2026 (%)

Source: Table 2.

Observing Chart 2, the direct growth rate shows that the value of infrastructure in creating better mobility of passengers and goods in urban areas in the period from 2016 by 2026, show growth of 44%, which is primarily related to the finalization of the longitudinal, transversal and city highways in Sarajevo, and also the planned implementation of bicycle infrastructure.

By comparing the growth values of the selected elements in Table 1 and direct growth rates in Table 2, it can be seen that the variables are greater in direct growth rates of the model of managing the urban mobility planning process, due to the effects of the remaining seven elements on each individual element.

When we take into consideration indirect growth rates, comparing the infrastructure respecting to other elements of mobility in the period 2016-2026 from Table 2 we can see the growth rate of 57% in relation to the superstructure, the environmental impact and the organization (integration) of transport services.

Compared to flows of passengers and goods, speed and travel/transport time and traffic safety, the development of infrastructure would be 50%, while in relation to the urban access regulations it would be even 80%.

If we compare the indirect growth rate of other model elements in relation to infrastructure construction, we can see that the superstructure will have a growth rate of 33%, while flows of passengers and goods, speed and travel/transport time and reduction of negative environmental impacts will increase by 44%. The growth rate of traffic safety and organization (integration) of transport services will have a growth rate of 56% in relation to infrastructure. The minimum growth rate regarding infrastructure will be for urban access regulations.

This analysis for indirect growth rates is valid for other elements of the model of managing the urban mobility planning process.

We can conclude that the basic hypothesis (based on the analysis of supply and demand of the city traffic system, good practices in sustainable urban mobility and existing strategies and development plans, a model for managing the whole planning process of sustainable urban mobility of the city traffic system in Sarajevo by 2026 can be proposed) of this work has been proved by direct growth rates.

CONCLUSION

The planning of the traffic system is constantly changing, which is caused by aspiration of enabling better life and work performance of citizens, which is greatly contributed by sustainable urban mobility. In order to evaluate the state of mobility in urban areas, the valorization of mobility elements was carried out. In light of SUMPs and the experience of Eltis, the criteria (elements) for the valorization of sustainable urban mobility were defined, which rely on transport supply and demand: infrastructure, suprastructure, flows of passengers and goods, speed and travel/transport time, traffic safety, urban access regulations, environment impact and organization (integration) of transport services.

The estimated inputs for selected elements in 2016 are relatively low because they reflect the current state of the mentioned elements, ranging from 20% to 50%. The reason for the low input values is inadequate investment in traffic infrastructure, outdated suprastructure, limitation and reduction of public transport passenger flows, low speed (passenger cars, city buses and trolleybuses) and longer travel time (in peak load and long wait times at the places of transferring from one mode of transport to another), a large number of traffic accidents, absence and non-implementation of the law on limitation of access to the city center and very basic integration of transport services. In order to achieve European standards of sustainable urban mobility (COM(2013) 913 final – Together towards competitive and resource-efficient urban mobility) and on the basis of existing strategic plans of the city, as well as regulatory, spatial and urban plans for the Sarajevo Canton, business plans of city and intercity/international transport service providers operating in Sarajevo area, the state of these elements will improve in the following period. That is the reason why all these values in 2026 are rated higher.

The growth matrix can focus the sustainable urban mobility planning process in Sarajevo, because it is possible to calculate the growth matrix of the model of managing the urban mobility planning process, based on the values of quantified model elements for 2016. and expected element values in 2021 and 2026. Useful information in comparative analysis can be obtained by matching appropriate growth rates for different periods.

By researching, analyzing and evaluating elements, we obtain the following: direct growth rates ranging from 40% to 71%, which show the growth of one element independently of the growth of other elements; and direct growth rate ranging from 22% to 100% which determine the growth structure of elements

and express all relations over the growth matrix in the in total management of the urban mobility planning process.

The analysis and evaluation of individual model elements and the obtained growth rates were intended for scientific purposes to formulate the results of the research, according to examples of good practices of the development of sustainable urban mobility by 2026.

The basic hypothesis of this paper was proved by the direct growth rates of the aforementioned model elements: Based on the analysis of supply and demand of the city traffic system, good practices in sustainable urban mobility and existing strategies and development plans, a model for managing the whole planning process of sustainable urban mobility of the city traffic system in Sarajevo by 2026 can be proposed.

This model contributes to the multidisciplinary research necessary for the planning of sustainable urban mobility, and there is a possibility for its practical application as well. By showing direct and indirect rates, it is possible to monitor changes in the intensity of growth of individual elements (key factors that need to be developed in order to achieve better urban mobility), as well as their structural relations.

In this paper, it has been found that in order to create better urban mobility for passengers and goods, there is a significant growth of organization (integration) of transport services is expected for 71%, traffic safety 63%, and environment impacts of 57%, which is also logical, because, together with infrastructure, they represent the foundation for a quality and safe urban mobility. On the other hand, the infrastructure records almost equal growth with elements that are mutually dependent (suprastructure, flows of passengers and goods, speed and travel/transport time), which shows the direct connection of certain activities in creating better urban mobility (by covering the area with adequate infrastructure network and more modern fleet will enable the growth of traffic connection, flows of passengers and goods, movement speed and reduce the travel time). Urban access regulations have a direct growth rate of 40%.

The performed evaluation contributes to a more complete understanding between elements and position of individual elements in an effort to provide the best possible mobility in the future. The model shows that only adequately built, optimally structured and organized movement system in cities, based on synergic

effect of all relevant elements of supply and demand, can influence the development of mobility in urban areas.

What remains interesting to do is cost-benefit analysis of cost-effectiveness of investment in the implementation of specific activities for individual elements of sustainable urban mobility.

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MODEL UPRAVLJANJA PROCESOM PLANIRANJA URBANE MOBILNOSTI

Mustafa Mehanović, Nermin Palić

Abstract: *The deterioration of traffic conditions associated with the expansion of urbanization and increased motorization has a negative impact on the economy of large cities. The pressures on urban transport systems are increasing as part of the process of growth. The average distance travel per vehicle is also increasing in all but the largest, most-congested cities like Sarajevo. This growth exceeds the ability to increase road space, and the major impediment to the efficient working of the urban economies in large-size cities, and particularly in megacities, is the level of road traffic congestion. Also, traffic congestion has a negative impact on the competitiveness and environment of urban economies; it causes inefficiencies in logistics operations and increases costs. The costs of the 'first' and 'last mile' of supply chains are too high and present a barrier to growth of home delivery. Urban logistics is heavily neglected in city and transport planning.*

For that reason, urban mobility planning processes are now essential if we want the transport service of passenger and goods to meet the needs of entrepreneurs and residents of urban/suburban areas. Urban transport and other innovative solutions (such as bicycle, car sharing, city cargo etc.) that are of great importance for the economic and ecological development of cities are becoming significantly important ways of ensuring mobility and accessibility within urban centers. Achieving urban mobility is also one of the most important goals of the European Union (EU) member states in creating a traffic policy, which requires a multidisciplinary approach and cooperation of all participants. According to the European Commission, the main goal of the sustainable urban mobility plan is to improve the accessibility of urban areas

and to ensure mobility and high-quality traffic to the city area and within it. Proper planning of sustainable urban mobility should be based on a detailed analysis of the present and future design of the urban traffic system and people behavior.

The subject of research in this paper is the planning of urban mobility development in the narrow part of Sarajevo using a model based on the growth matrix. The hypothesis of this research is: Based on the analysis of supply and demand of the city traffic system, good practices in sustainable urban mobility and existing strategies and development plans, a model for managing the whole planning process of sustainable urban mobility of the city traffic system in Sarajevo by 2026 can be proposed.

In accordance with the experience of Europe's main urban mobility observatory (Eltis) and sustainable urban mobility plans (SUMPs), the key elements are defined: infrastructure, suprastructure, flows of passengers and goods, speed and travel/transport time, traffic safety, urban access regulations, environment impact and organization (integration) of transport services. The next step, after defining the elements of urban mobility, is to carry out the quantification of elements for 2016 (by adapting the Urban Mobility Index 3.0 for Sarajevo). Thereafter, there is a concise explanation of the growth matrix and model of managing the urban mobility planning process is created. In the research results, direct and indirect growth rates were elaborated and analyzed, i.e. the individual and synergic effects of the model. Finally, the synthesis of the research results was presented.

According to the model, the proper order of funds investment into aforementioned elements will contribute to the perfect harmony of all aspects of supply and demand of urban mobility services, and hence the economic development of the city.

Keywords: *model, growth matrix, sustainable urban mobility, planning process.*

JEL: *R41, R42, R51*

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PREGLEDNI NAUČNI RAD / OVERVIEW SCIENTIFIC PAPER

DETERMINANTE PORESKE EVAZIJE U BOSNI I HERCEGOVINI

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Apstrakt: *Funkcionisanje poreskog sistema i oporezivanja jedne ekonomije su od krucijalnog značaja za ukupnu finansijsku stabilnost, a poreska evazija je jedan od značajnijih rizika, ukoliko se ne rješava na adekvatan način i ona zbog svoje visine može da prouzrokuje ozbiljnu finansijsku nestabilnost jedne zemlje. Mnoge zemlje današnjice suočavaju se sa problemom poreske evazije i izvještaji o poreskoj evaziji se svakodnevno umnožavaju. Nijedan poreski sistem nije imun na poresku evaziju, samo su različite metode poreske evazije u različitim poreskim sistemima.*

Na poresku evaziju utiču svojom isprepletenošću i determiniranošću brojni i raznovrsni faktori subjektivni ili objektivni i svi faktori poreske evazije su uzajamno povezani i nadopunjujući. Poreska evazija ima multiplikativno dejstvo, narušava ugled prije svega institucija, posebno poreske administracije, ugrožava poreski sistem i načela pravne države, prouzrokujući nepovjerenje prije svega poreskih obveznika u sam poreski sistem i smanjenjem poreske evazije značajno se poboljšava stanje u javnim finansijama.

Prepoznavanje postojećih ključnih faktora poreske evazije ili istraživanje da postoje i drugi koji su podjednako ili čak i više važniji, de facto, potvrđuju kompleksnost, značaj i aktuelnost ove problematike.

Ključne riječi: *Porez, poreska evazija, demografsko-socijalno-statusne karakteristike ispitanika.*

JEL Klasifikacija: *H20, H26, H32.*

UVOD

Prikupljanje poreza kao najznačajnijeg javnog prihoda je veoma značajno radi funkcionisanja i održivog razvoja a sa tim procesom dolazi kao nerazdvojna pojava i poreska evazija. Savremeni razvoj društva i načini privređivanja karakterišu brojne, velike i turbulentne promjene, sve veća liberalizacija i globalizacija i internacionalizacija. Poreska evazija se prema modernoj teoriji i praksi shvata kao univerzalni problem koji je duboko ukorijenjen u socijalnim, kulturnim, institucionalnim i političkim karakteristikama svake pojedinačne zemlje i štetne posljedice odražavaju se u sferi ekonomije, politike, institucija, privrede i finansija. Poreska evazija je univerzalna pojava. Ona se odvija u svim društvima, u svim društvenim slojevima, u svim profesijama, u svim industrijama, u svim religijama i gotovo svim ekonomskim sistemima (Kirchler, 2009, str.182).

Postavlja se pitanje a i dileme su prisutne, kako istraživanjem povezati i utvrditi koji subjektivni i objektivni faktori najviše utiču na fenomen poreske evazije odnosno koji su u korelaciji (ili se pretpostavlja da su u korelaciji) sa njenom visinom i raširenošću? Koji faktori više su podložni uticaju drugih i koji mogu biti regulisani?

Kroz teorijske modele ponašanja poreskih obveznika kod poreske evazije, istraživači pokušavaju ustanoviti koji su to najvažniji faktori koji utiču na poreskog obveznika da izbjegava plaćanje poreskih obaveza. Faktori koji utiču na ispunjenje poreske obaveze ili ne ispunjenje se razlikuju od jedne zemlje do druge a također zavise i od individualnog ponašanja od jednog lica do drugog (Kirchler, 2007).

Željene promjene na planu determinacije, smanjenja i prevencije faktora poreske evazije zahtijevaju da se napravi dobar instrumentarij, dizajn i odgovarajuće promjene ne u samom poreskom sistemu, organizaciji poreske administracije, kontroli poreskih obveznika, vjerovatnoće otkrivanja i visini kazne, visini poreskog opterećenja i poreske stope, korupciji, poreskom moralu, etici i kulturi već i u ekonomskom, socijalnom, društvenom, institucionalnom i političkom stanju države i društva, uz transformaciju na svim nivoima, horizontalnu i vertikalnu, kako bi se obezbijedilo efikasno sprovođenje i ostvarivanje ciljeva. Brojni su faktori koji utiču i podstiču na poresku evaziju, između pojedinih faktora postoji interakcija i oni mogu biti strukturalni problemi jedne zemlje. Faktori poreske evazije su uzajamno povezani i nadopunjujući u svim zemljama iz razloga što su države i društva bitno različiti sa stanovišta privrednog sistema i stepena razvoja, različitog zakonodavnog, poreskog okvira ili istorijskog razvoja. Većina država

nastoji da utiče na faktore, ali kako to može da ima značajne posljedice, takva odluka ne bi trebala da se donosi bez pažljivog istraživanja.

Veliki je broj egzogenih faktora, na koje poreski obveznik ima vrlo mali ili nikakav utjecaj, jer se faktori dinamički mijenjaju tokom vremena (privredni uslovi, inovacije u poslovanju, razvoj e-trgovine, ekonomska kriza, politička stabilnost, raspoloživost resursa, infrastruktura, konkurentska situacija, kvalitet i sposobnost državnih institucija, poreska legislativa) a oni istovremeno imaju veoma značaj utjecaj, njihova stabilnost je bitan preduslov i najneposrednije utiču prije svega na finansijsku situaciju poreskog obveznika. Jasno je da od razvoja ovih faktora zavisi kako će se finansirati država od strane poreskih obveznika a samim tim i većeg blagostanja u državi što i jeste konačni cilj ekonomske politike bilo koje zemlje. Posljednjih godina rasprave o ovom pitanju su još intenzivnije, poreska evazija je kontraverzno područje koje je teško harmonizirati, jer se faktori umnogome usložnjavaju uslijed promjena iz okruženja.

Obzirom da je sa aspekta pojedinca, poreski obveznik podložan raznim uticajima pogoršanog vanjskog okruženja a može biti ograničen brojnim endogenim faktorima unutar samog sebe, (konkurentnost, kreditna sposobnost, vlastita organizacija) mora neprestano da se prilagođava. Razmatrajući karakter pojedinih faktora, u svom manevarskom prostoru u načelu poreski obveznik može uticati na faktore koje se odnose interno na njega samog, ali nema mogućnost uticaja na faktore koji eksterno utiču na samog poreskog obveznika, osim prilagođavanja novonastaloj situaciji. Poznato je da upravljanje bilo kojom pojavom i konceptom zahtijeva poznavanje determinanti te pojave i svakako da se kao jedan od ključnih problema postavlja i nameće upoznavanje sa pojavom koje će pružiti korisno polazište za formulisanje politike za suzbijanje te pojave. Rješenja se ne mogu uopštavat i generalizirati, jer svako područje zahtijeva posebna razmatranja i specifična rješenja i to je stalna i univerzalna tema. Zato se postavlja pitanje koje su ključne determinante za nastanak poreske evazije, koji faktori doprinose i koje treba razmotriti? Glavni teorijski pristupi u objašnjenju načina poštivanja poreskih propisa (kod poreske evazije) obično su podijeljeni u modelu pristupa „ekonomskog odvraćanja" i u širem pristupu koji uključuje socijalne, fiskalne i psihološke pristupe. Faktori koji su ispitani u modelu pristupa ekonomskog odvraćanja uključuju, složenost poreskog sistema, nivo usluga pruženih na osnovu prikupljenih prihoda, informacije iz finansijskih izvještaja, visina odgovornosti radi kazne, vjerovatnoća poreske kontrole, progresivna i stvarna visina poreske stope, visina kazna za poresku evaziju (Devos, 2014, str.14).

SOCIJALNO DEMOGRAFSKE KARAKTERISTIKE

Veza između demografskih determinanti i poreske evazije dugo je bilo predmet interesa istraživanja (Tittle, 1980). Demografske varijable su uključene u poznati Fisherov model poštivanja propisa (Fischer, Wartick i Mark, 1992), faktora koji utiču na ponašanje poreskih obveznika. Demografski faktori koji su uključeni u Fisherov model su starosna dob, spol, edukacija i zanimanje. Analiza demografskih i socijalni (engl. demographic/social) determinanti se fokusira na demografske i socijalne promjene i njihov uticaja na poresku evaziju.

Pri operacionalizaciji problema istraživanja, tj. ispitivanja stavova poreskih obveznika i državnih službenika o uticaju uvođenju PDV u BiH na poreske prevare i utaje kao i faktora koji u manjoj ili većoj mjeri determinišu te stavove (s obzirom na smjer i intenzitet), polazio sam od ranije navedenih konstatacija da djelovanje različitih faktora u socijalnoj sredini može biti manje ili više podsticajno za ispoljavanju različitih oblika ponašanja, te da se u tom smislu može govoriti i o uslovima koji su manje ili više povoljni za određene oblike ponašanja. Stoga je za razumijevanje stavova o poreskim prevarama i utajama važno analizirati i socijalno okruženje koje je medij za ispoljavanje takvih stavova (Terzić, 2009, str.79). Kao faktori poreske evazije u literaturi se navode i same socijalno demografske karakteristike poreskih obveznika. Kao najvažniji faktori oportuniteta navode se radno iskustvo i obrazovanje značajno za nalaženje posla i njegovo uspješno obavljanje van okvira zakonske regulative (Jović i dr., 2003).

Socijalno etičko ponašanje pojedinca zavisi od ličnih vrijednosti samog pojedinca ali i od ponašanja okoline odnosno od objektivnih faktora. Pojedinac pa čak i cijela skupina poreskih obveznika mogu biti skloniji ka činjenju poreske evazije od drugih. To su jednostavno same karakteristike i socijalno psihološke osobine poreskih obveznika i oni čine poresku evaziju ako im se ukaže prilika. Određene organizovane grupe mogu djelovati kao jedan alternativni društveni sistem, u kojem se akteri povezuju putem zajedničkih karakteristika ista starosna dob, zanimanje ili nivo edukacije. Vjeruje se da pojedine socijalno demografske karakteristike poreskih obveznika mogu imati značajnu ulogu u nastanku poreske evazije.

Socijalne norme imaju rastuću pažnju u ekonomskoj literaturi. Acemoglu, Jackson (2014), istraživali se interakciju društvenih normi i sprovođenje zakona. Oni tvrde da pooštravanje zakona može imati komplementarne efekte na norme i ponašanje ukoliko se sprovedu pažljivo (Abraham i dr., 2016, str.2). Istraživanja pružaju dokaze koji ukazuju na različita ponašanja muškaraca i žena prema spremnosti preuzimanju rizika. Studije pokazuju da su žene pokazale više sklonosti

prema riziku kod donošenja odluka, posebno odluka vezano za finansijske rizike (Meier-Pesti, Penz, 2008). Polinsky i Shavell (2000), prezentirali su istraživanje ekonomske teorije javnog sprovođenja zakona, ističu važnost socijalnih normi u smislu da socijalne norme mogu se smatrati kao opšta zamjena kod sprovođenje zakona radi usmjeravanja pojedinaca u njihovom ponašanja.

Starosna dob i spol

Sa ciljem davanja odgovora naučno utemeljenoga i relevantnog u istraživačkim pitanjima empirijskoga tipa istraživanja da li određeni faktor ima uticaja na pojavu poreske evazije posebno se analizira starosna dob i spol ispitanika, kao dominantna karakteristika svakog poreskog obveznika. Starosna dob je uobičajena demografska varijabla.

Prema istraživanjima, mlađi poreski obveznici su više spremniji da preuzimaju rizične aktivnosti i manje su osjetljivi na dobijene sankcije. Većina studija koje su pregledali Richardson i Sawyer (Devos, 2014, str.88), koji su ispitivali starosnu dob kao faktor pokazala je da su starije osobe poreski obveznici skloniji da budu korektniji od mlađih poreskih obveznika. Rana istraživanja (Tittle, 1980), testirala su nivo poštivanja poreskih propisa žena vs. muškaraca i došla do zaključka da žene više poštuju poreske propise, jer imaju osjećaj moralne obaveze plaćanja. Tradicionalno, žene imaju moralne stavove i više konzervativan obrazac života (Jackson, Milliron, 1986). Za muškarce i mlađe osobe je dokazano da imaju veće šanse da izbjegavaju porez (Alm, Torgler, 2006).

Obrazovanje i zanimanje

Funkcija edukacije je važna da bi se uvele zakonske promjene u samoj poreskoj administraciji i novi radni metodi. Edukacija kao demografska varijabla odnosi se na sposobnost poreskih obveznika da shvate zakone (Jackson, Milliron, 1986). Osobe bez obrazovanja imaju negativnije mišljenje o institucijama nego ispitanici s višim obrazovanjem (Gërxani, 2003, str.76). Istraživani aspekti znanja su opšti stepen fiskalnoga znanja i stepen znanja o mogućnostima poreskih prevara i utaja. Smatra se da fiskalno znanje utiče na pozitivan stav za plaćanje. Brojna su i istraživanja sprovedena o edukaciji i zanimanju kao iznimno bitnoj determinanti sa aspekta da li bitno ili presudno utiče na poštivanje i sprovođenje poreskih zakonskih propisa i poresku evaziju.

Edukacija o poreskoj evaziji, ulozi i funkciji u savremenom društvu i uticaju neplaćanja poreza samih poreskih obveznika može efikasno i uspješno smanjiti sam rizik pojave poreske evazije. U literaturi se odnos između zanimanja i evazije

objašnjava ovisno o sektoru u kojemu lice radi (Gërxani, 2003, str.68). Visokoobrazovane osobe imaju bolje mišljenje o formalnim institucijama nego neobrazovani ljudi; visokoobrazovane osobe također pozitivnije ocjenjuju neformalne institucije nego one s nižim obrazovanjem (Gërxani, 2003, str.79).

Nivo edukacije ima komplikovan efekat na poresku evaziju. Alm, Torgler, (2006), studijom su dokazali da nivo edukacije ima veliki uticaj na unapređenje poštivanja poreskih propisa. Postoji pozitivna relacija između edukacije i poreske evazije. Bez obzira na stepen stručne spreme i poreski službenici trebaju biti edukovani i periodično trebaju da usavršavaju svoja znanja, kako bi mogli odgovoriti promjenama u smislu izbjegavanja zakonskih propisa koja se dešavaju.

MATERIJALI I METODE

Osnovni cilj predmetnog istraživanja je identifikovati ključne demografsko-socijalne determinante koji utiču na poresku evaziju. Da bi se ostvario postavljeni cilj, empirijsko istraživanje je se fokusiralo na prikupljanje podataka kako od strane poreskih obveznika tako i od zaposlenih u poreskim administracijama. U skladu sa predmetom i problemom istraživanja i ciljevima empirijskog istraživanja u uzorku na kome je sprovedeno istraživanje dvije su ključne grupe ili poduzorka: 200 poreskih obveznika (66,7%) i 100 poreskih inspektora (33,3%), čije stavove se u okviru daljih analiza i interpretacije podataka dobivenih primarnim istraživanjem kompariraju. Fazom terenskog istraživanja anketirane se dvije grupe ispitanika poreskih obveznika, po prirodi stvari „suprostavljenih strana“, direktori privrednih društava ili drugo odgovorno lice (Federacija BiH, Republika Srpska i Brčko Distrikt Bosne i Hercegovine) koji ostvaruju intenzivne kontakte sa poreskom službom i zaposleni u profesionalnim organizacijama (poreski inspektori Uprava za indirektno oporezivanje, Federacija BiH, Republika Srpska i Brčko Distrikt BiH). Za potrebe sprovođenja istraživanja, izrađen je opsežan anketni upitnik koji je reprezentativan i prigodan i koji sam po sebi predstavlja snažnu inicijativu za daljna istraživanja fenomena poreske evazije.

Prema spolnoj strukturi ispitanici u uzorku su relativno ravnomjerno distribuirani: 46,3% muškaraca i 53,7% žena. U analiziranom uzorku dominiraju ispitanici sa visokom školskom spremom 71,67%. U uzorku dominiraju ispitanici koji stanuju u mjestima sa više od 10.000 stanovnika (83%). Veoma je mali udio ispitanika iz mjesta sa manje od 1.000 stanovnika (1,33%), i u poduzorcima situacija je slična i obzirom da je uzorak kao i poduzorci dosta homogen i vrlo slične strukture po pitanju ove karakteristike, komparacije između grupa

po karakteristici mjesto stanovanja nisu potrebne. U pogledu složenosti organizacione strukture, u poduzorku obveznika većinom su odgovarala odgovorna lica u poslovnom subjektu koja nisu direktori, (55%) a u okviru poduzorka inspektora većinom imamo inspektore UIO (26,67%), a dominiraju ispitanici sa radnim stažom 6 do 20 godina. Prema kriteriju broja zaposlenih dominiraju mala društva sa manje od 10 zaposlenih 62,5%. Najmanji je broj obveznika sa više od 250 zaposlenih (velika preduzeća).

REZULTATI I DISKUSIJA

Hipoteza ovog rada je da demografsko-socijalno-statusne karakteristike ispitanika spadaju u sistem statistički značajnih determinanti njihovih stavova prema poreskoj evaziji.

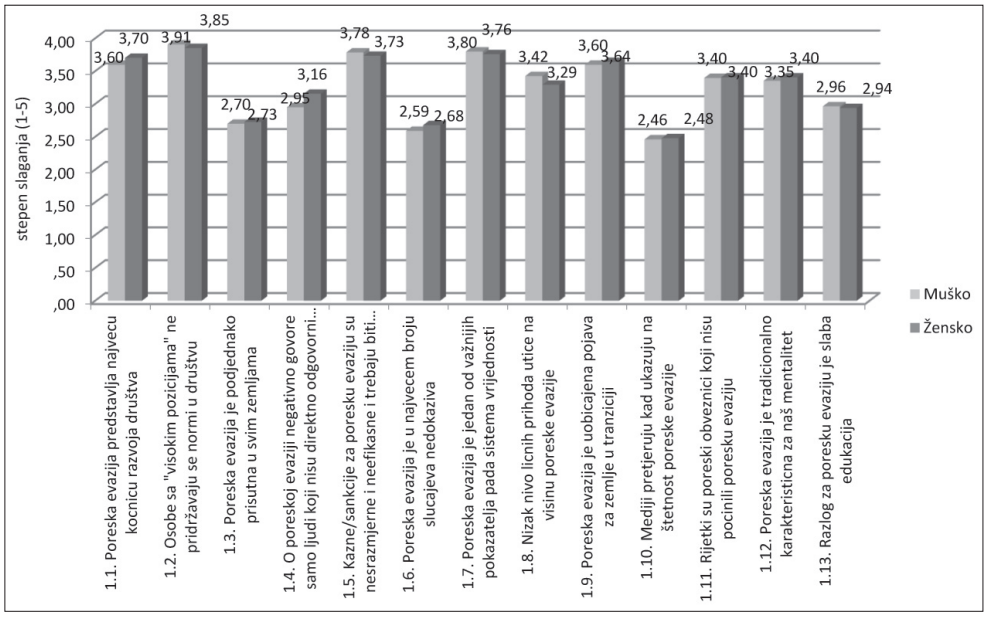
Komparacija između grupa prema demografsko-socijalno-statusnim karakteristikama

Kako bi se provjerila hipoteza uporediti će se stavovi ispitanika sa različitim demografsko-socijalno-statusnim karakteristikama (spol, obrazovanje i radno iskustvo) po pitanju saglasnosti sa tvrdnjama koje izražavaju stavove o poreskoj evaziji. U cilju komparacije između tih grupa po pitanju saglasnosti u kontekstu tvrdnji koje izražavaju stavove o poreskoj evaziji, kako je riječ o varijablama mjerenim na Likertovoj skali (ordinalnim varijablama) koje ne zadovoljavaju pretpostavku „normalnosti" unutar grupa u cilju poređenja poduzoraka koristit će se odgovarajući neparametarski testovi za dvije (Mann-Whitney U test) ili više od dvije grupe (Kruskal -Wallisov one way test).[1] Prvo će se sagledati deskriptivne statistike po datim varijablama unutar poduzoraka. Te rezultate provjerit će se i krostabulacijom i hi-kvadrat testom međuzavisnosti.

Spol

Sagledavamo strukture i deskriptivne statistike po datim varijablama unutar grupa formiranih prema spolu po pitanju 13 tvrdnji koje izražavaju stav prema poreskoj evaziji), prilog (tabela 1.) i (grafikon 1.).

[1] Kruskal-Wallisov one way test znači da se testira da li postoji statistički značajna razlika između medijalnih vrijednosti više uzoraka (nezavisnih) koji predstavljaju ciljne populacije ako distribucija analizirane pojave ne zadovoljava pretpostavku normalnosti ili su uzorci mali. To je prošireni test sume rangova ili poopštenje Mann – Whitney-evog testa za *k* uzoraka. Rezultira hi-kvadrat empirijskom vrijednošću. *P*-vrijednost uz odgovarajući Kruskal-Wallisovog one way test se smatra statistički značajnom ili signifikantnom ako je niža od 0,05, obzirom da se testovi rade sa greškom prve vrste 5% to jeste signifikantnošću 95%. U tom slučaju se prihvata hipoteza da se posmatrani uzorci ili grupe statistički značajno razlikuju.

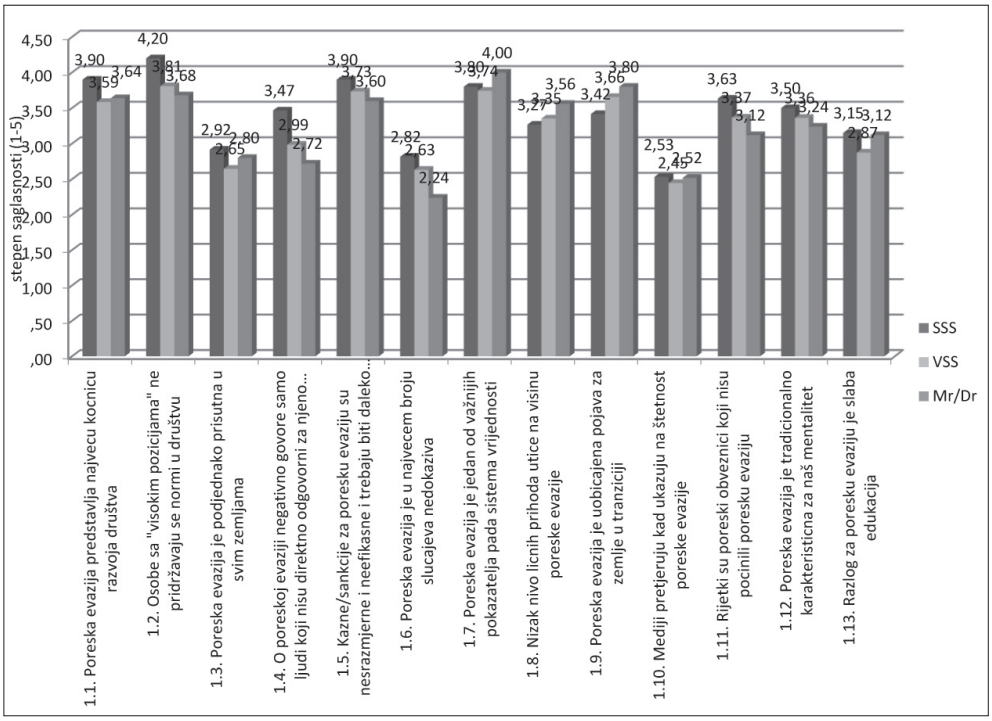


Grafikon 1. Prosječne ocjene stepena slaganja po pitanju 13 tvrdnji koje izražavaju stav prema poreskoj evaziji u grupama formiranim prema spolu

Grafikon 1. jasno ukazuje na vrlo slične stavove ispitanika različitih spolova, što pokazuje i deskriptivna statistika. Niti jedna razlika između grupa formiranih po spolu nije statistički signifikantna (sve p vrijednosti za U test u tabeli 1. su više od 0,05, prilog 1.). To je razlog što dalje ne provodimo hi-kvadrat test i krostabulaciju, jer je evidentno da su razlike između spolova minorne. Dakle, može se zaključiti da spol kao socijalno-statusna karakteristika ispitanika nije determinanta njihovog stava prema poreskoj evaziji.

Obrazovanje

Sagledavamo strukture i deskriptivne statistike po datim varijablama unutar grupa formiranih prema obrazovanju, prilog (tabela 2.), struktura ispitanika iz grupa formiranih prema obrazovanju po pitanju 13 tvrdnji koje izražavaju stav prema poreskoj evaziji (grafikon 2.).



Grafikon 2. Prosječne ocjene stepena slaganja po pitanju 13 tvrdnji koje izražavaju stav prema poreskoj evaziji u grupama formiranim prema obrazovanju

Grafikon 2. ukazuje na razlike u stavove ispitanika različitih nivoa obrazovanja i to uglavnom u smjeru da ispitanici iz grupe SSS pokazuju viši stepen saglasnosti, što pokazuje i deskriptivna statistika. Međutim, prema rezultatima Kruscal-Wallis testa te razlike su signifikantne prema sljedećim tvrdnjama:

- Osobe sa „visokim pozicijama" ne pridržavaju se normi u društvu,
- O poreskoj evaziji negativno govore samo ljudi koji nisu direktno odgovorni za njeno suzbijanje.

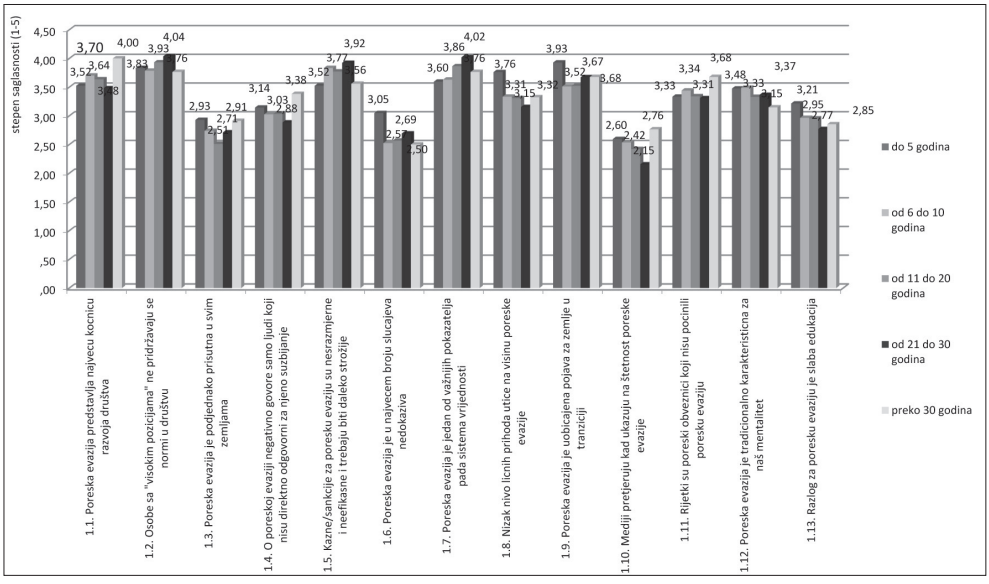
Po pitanju opšteg stava prema poreskoj evaziji ispitanici sa SSS imaju signifikantno viši stepen slaganja.

Krostabulacijom i rezultatima hi-kvadrat testova za varijablu čiji su modaliteti formirani prema nivou obrazovanja i varijable u vezi tvrdnji koje izražavaju stavove o poreskoj evaziji zaključuje se da prema hi-kvadrat testu kod sljedeće tri tvrdnje postoji statistički značajna razlika između stavova u grupama ispitanika sa različitim nivoom obrazovanja:

Osobe sa „visokim pozicijama" ne pridržavaju se normi u društvu
Hi-kvadrat vrijednost = 16,098
P vrijednost = 0,041< 0,05 Þ postoji signifikantno različit stav po ovoj tvrdnji kod ispitanika iz grupa sa različitim nivoom obrazovanja
O poreskoj evaziji negativno govore samo ljudi koji nisu direktno odgovorni za njeno suzbijanje
Hi-kvadrat vrijednost = 18,309
P vrijednost = 0,019 < 0,05 Þ postoji signifikantno različit stav po ovoj tvrdnji kod ispitanika iz grupa sa različitim nivoom obrazovanja
Poreska evazija je jedan od važnijih pokazatelja pada sistema vrijednosti.
Hi-kvadrat vrijednost = 16,005
P vrijednost = 0,042< 0,05 Þ postoji signifikantno različit stav po ovoj tvrdnji kod ispitanika iz grupa sa različitim nivoom obrazovanja

Radno iskustvo

Sagledavamo strukture i deskriptivne statistike po datim varijablama unutar grupa formiranih prema radnom iskustvu, prilog (tabela 3.), i strukturia ispitanika iz grupa formiranih prema radnom iskustvu po pitanju 13 tvrdnji koje izražavaju stav prema poreskoj evaziji (grafikon 4.).



Grafikon 4. Prosječne ocjene stepena slaganja po pitanju 13 tvrdnji koje izražavaju stav prema poreskoj evaziji u grupama formiranim prema radnom iskustvu

Grafikon 4. ukazuje na razlike u stavove ispitanika sa različitim radnim iskustvom, što pokazuje i sama deskriptivna statistika. Prema rezultatima Kruscal-Wallis testa te razlike su signifikantne prema sljedećim tvrdnjama:

- Poreska evazija je u najvećem broju slučajeva nedokaziva
- Mediji pretjeruju kad ukazuju na štetnost poreske evazije.

Po pitanju opšteg stava prema poreskoj evaziji ispitanici sa različitim radnim iskustvom nisu signifikantno različiti.

Krostabulacija i rezultati hi-kvadrat testova za varijablu čiji su modaliteti formirani prema radnom iskustvu i varijable u vezi tvrdnji koje izražavaju stavove o poreskoj evaziji prema hi-kvadrat testu kod sljedećih (5) pet tvrdnji postoji statistički značajna razlika između stavova u grupama ispitanika sa različitim radnim iskustvom:

O poreskoj evaziji negativno govore samo ljudi koji nisu direktno odgovorni za njeno suzbijanje
Hi-kvadrat vrijednost = 31,478
P vrijednost = 0,012< 0,05 Þ postoji signifikantno različit stav po ovoj tvrdnji kod ispitanika iz grupa sa različitim radnim iskustvom
Kazne/sankcije za poresku evaziju su nesrazmjerne i neefikasne i trebaju biti daleko strožije
Hi-kvadrat vrijednost = 27,0858
P vrijednost = 0,041 < 0,05 Þ postoji signifikantno različit stav po ovoj tvrdnji kod ispitanika iz grupa sa različitim radnim iskustvom
Poreska evazija je u najvećem broju slučajeva nedokaziva
Hi-kvadrat vrijednost = 27,228
P vrijednost = 0,039< 0,05 Þ postoji signifikantno različit stav po ovoj tvrdnji kod ispitanika iz grupa sa različitim radnim iskustvom
Nizak nivo ličnih prihoda utiče na visinu poreske evazije
Hi-kvadrat vrijednost = 31,780
P vrijednost = 0,011 < 0,05 Þ postoji signifikantno različit stav po ovoj tvrdnji kod ispitanika iz grupa sa različitim radnim iskustvom
Mediji pretjeruju kad ukazuju na štetnost poreske evazije
Hi-kvadrat vrijednost = 36,890
P vrijednost = 0,002< 0,05 Þ postoji signifikantno različit stav po ovoj tvrdnji kod ispitanika iz grupa sa različitim radnim iskustvom

ZAKLJUČAK

Opšti zaključak po pitanju hipoteze posmatrane demografsko-socijalno-statusne karakteristike ispitanika spadaju u sistem statistički značajnih determinanti njihovih stavova prema poreskoj evaziji je da se hipoteza djelimično prihvata: za spol nije dokazano da je determinanta stava ispitanika prema poreskoj evaziji, dok nivo obrazovanja i radno iskustvo po nekim karakteristikama to jesu. Pojedine socijalno statusne karakteristike ispitanika su se u istraživanju pokazale kao bitna odrednica za ispoljavanje motiva i stavova. U prosjeku je dokazano da nivo obrazovanja jeste determinanta stava prema poreskoj evaziji a radno iskustvo nije.

Kontinuiranim unapređenjem socijalnih normi (koje upućuju na saradnju i zajedničke aktivnosti) unapređuje se kredibilitet i reputacija poreskog autoriteta kod javnosti, poslovne zajednice, drugih službi i interesnih grupa i s tim u vezi neophodno je uspostaviti mehanizme koji će u javnosti podići nivo uvjerenja o štetnosti poreske evazije.

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DETERMINANTS OF TAX EVASION IN BOSNIA AND HERCEGOVINA

Abstract: *The functioning of the tax system and taxation in one economy is of crucial importance to overall financial stability, and tax evasion is one of the major risks, if not addressed adequately, and, depending on the amount of taxes evaded, can trigger severe financial instability in a country. Today, many countries are faced with the problem of tax evasion and reports of tax evasion multiply by the day. No tax system is immune to tax evasion, the only difference is the methods of tax evasion in different tax systems.*

Many and diverse factors, both subjective and objective, affect tax evasion as they are intertwined and determined and mutually connected and complementary. Tax evasion has multiplicative effects, it destroys the reputation of institutions primarily and in particular the reputation of the tax administration, it poses a threat to the tax system and rule of law, causing taxpayers' distrust of the tax system itself. Thus, by reducing tax evasion the situation in public finances improves substantially.

Recognition of the existing key factors of tax evasion or research into the existence of others just as, if not more important factors, de facto confirms how complex, important and current this issue is.

Keywords: *Tax, tax evasion, demographic, social and status characteristics of respondents.*

JEL classification: *H20, H26, H32.*

Prilog tabela 1. Deskriptivna statistika i Mann-Whitney testa za komparacije između stepena slaganja ispitanika u grupama formiranim prema spolu po pitanju 13 tvrdnji koje izražavaju stav prema poreskoj evaziji

	Muško			Žensko			Mann-Whitney U	Wilcoxon W	Z	p vrijednost
	Prosjek	Medijana	Standardna devijacija	Prosjek	Medijana	Standardna devijacija				
1.1. Poreska evazija predstavlja najveću kočnicu razvoja društva	**3,60**	4,00	1,128	**3,70**	4,00	1,005	10815	20545	-,544	,587
1.2. Osobe sa „visokim pozicijama" ne pridržavaju se normi u društvu	**3,91**	4,00	1,014	**3,85**	4,00	,950	10618	23659	-,822	,411
1.3. Poreska evazija je podjednako prisutna u svim zemljama	**2,70**	2,00	1,074	**2,73**	2,00	1,066	10961	20691	-,327	,744
1.4. O poreskoj evaziji negativno govore samo ljudi koji nisu direktno odgovorni za njeno suzbijanje	**2,95**	3,00	1,072	**3,16**	3,00	1,028	9958	19688	-1,708	,088
1.5. Kazne/sankcije za poresku evaziju su nesrazmjerne i neefikasne i trebaju biti daleko strožije	**3,78**	4,00	1,013	**3,73**	4,00	1,005	10825	23866	-,521	,602
1.6. Poreska evazija je u najvećem broju slučajeva nedokaziva	**2,59**	2,00	1,089	**2,68**	2,00	,998	10513	20243	-,989	,323
1.7. Poreska evazija je jedan od važnijih pokazatelja pada sistema vrijednosti	**3,80**	4,00	,910	**3,76**	4,00	,804	10694	23735	-,740	,459
1.8. Nizak nivo ličnih prihoda utiče na visinu poreske evazije	**3,42**	4,00	1,136	**3,29**	4,00	1,099	10382	23423	-1,144	,252
1.9. Poreska evazija je uobičajena pojava za zemlje u tranziciji	**3,60**	4,00	1,020	**3,64**	4,00	,972	11071	20801	-,176	,861
1.10. Mediji pretjeruju kad ukazuju na štetnost poreske evazije	**2,46**	2,00	,980	**2,48**	2,00	1,013	11104	20834	-,124	,901
1.11. Rijetki su poreski obveznici koji nisu počinili poresku evaziju	**3,40**	4,00	1,101	**3,40**	4,00	1,045	11122	24163	-,096	,924
1.12. Poreska evazija je tradicionalno karakteristična za naš mentalitet	**3,35**	4,00	1,116	**3,40**	4,00	1,033	11106	20836	-,119	,905
1.13. Razlog za poresku evaziju je slaba edukacija	**2,96**	3,00	1,218	**2,94**	3,00	1,171	11071	24112	-,167	,867
Opšti stav ispitanika prema poreskoj evaziji	**3,271**	3,231	0,469	**3,289**	3,231	0,423	11020	20750	-,227	,820

Prilog tabela 2. Deskriptivna statistika i Kruscal-Wallis testa za komparacije između stepena slaganja ispitanika u grupama formiranim prema obrazovanju po pitanju 13 tvrdnji koje izražavaju stav prema poreskoj evaziji

	SSS			VSS			Mr./Dr.				
	Prosjek	Medijana	Standardna devijacija	Prosjek	Medijana	Standardna devijacija	Prosjek	Medijana	Standardna devijacija	Hi-kvadrat	p vrijednost
1.1. Poreska evazija predstavlja najveću kočnicu razvoja društva	**3,90**	4,00	1,037	**3,59**	4,00	1,068	**3,64**	4,00	1,036	4,837	,089
1.2. Osobe sa „visokim pozicijama" ne pridržavaju se normi u društvu	**4,20**	4,00	,917	**3,81**	4,00	,979	**3,68**	4,00	,988	10,833	**,004**
1.3. Poreska evazija je podjednako prisutna u svim zemljama	**2,92**	3,00	1,169	**2,65**	2,00	1,017	**2,80**	2,00	1,225	3,124	,210
1.4. O poreskoj evaziji negativno govore samo ljudi koji nisu direktno odgovorni za njeno suzbijanje	**3,47**	4,00	1,016	**2,99**	3,00	1,039	**2,72**	3,00	1,021	13,773	**,001**
1.5. Kazne/sankcije za poresku evaziju su nesrazmjerne i neefikasne i trebaju biti daleko strožije	**3,90**	4,00	,986	**3,73**	4,00	1,000	**3,60**	4,00	1,118	1,671	,434
1.6. Poreska evazija je u najvećem broju slučajeva nedokaziva	**2,82**	3,00	1,081	**2,63**	2,00	1,055	**2,24**	2,00	,663	5,252	,072
1.7. Poreska evazija je jedan od važnijih pokazatelja pada sistema vrijednosti	**3,80**	4,00	,898	**3,74**	4,00	,845	**4,00**	4,00	,816	2,443	,295
1.8. Nizak nivo ličnih prihoda utiče na visinu poreske evazije	**3,27**	3,50	1,191	**3,35**	4,00	1,105	**3,56**	4,00	1,044	1,224	,542
1.9. Poreska evazija je uobičajena pojava za zemlje u tranziciji	**3,42**	4,00	1,124	**3,66**	4,00	,958	**3,80**	4,00	,913	2,933	,231
1.10. Mediji pretjeruju kad ukazuju na štetnost poreske evazije	**2,53**	2,00	1,081	**2,45**	2,00	,984	**2,52**	2,00	,918	,296	,863
1.11. Rijetki su poreski obveznici koji nisu počinili poresku evaziju	**3,63**	4,00	,991	**3,37**	4,00	1,072	**3,12**	3,00	1,166	4,917	,086
1.12. Poreska evazija je tradicionalno karakteristična za naš mentalitet	**3,50**	4,00	1,066	**3,36**	4,00	1,049	**3,24**	4,00	1,268	1,215	,545
1.13. Razlog za poresku evaziju je slaba edukacija	**3,15**	3,50	1,191	**2,87**	2,00	1,195	**3,12**	3,00	1,130	3,176	,204
Opšti stav ispitanika prema poreskoj evaziji	**3,423**	3,385	0,437	**3,246**	3,231	0,447	**3,234**	3,231	0,378	10,365	**,006**

Prilog. tabela 3. Deskriptivna statistika i Kruscal-Wallis testa za komparacije između stepena slaganja ispitanika u grupama formiranim prema obrazovanju po pitanju 13 tvrdnji koje izražavaju stav prema poreskoj evaziji

	Do 5 godina			6 – 10 godina			11 – 20 godina		
	Prosjek	**Medijana**	**Standardna devijacija**	**Prosjek**	**Medijana**	**Standardna devijacija**	**Prosjek**	**Medijana**	**Standardna devijacija**
1.1. Poreska evazija predstavlja najveću kočnicu razvoja društva	**3,52**	4,00	,943	**3,70**	4,00	1,138	**3,64**	4,00	1,008
1.2. Osobe sa „visokim pozicijama" ne pridržavaju se normi u društvu	**3,83**	4,00	,986	**3,79**	4,00	,970	**3,93**	4,00	,894
1.3. Poreska evazija je podjednako prisutna u svim zemljama	**2,93**	3,00	1,091	**2,74**	2,00	1,066	**2,51**	2,00	1,006
1.4. O poreskoj evaziji negativno govore samo ljudi koji nisu direktno odgovorni za njeno suzbijanje	**3,14**	3,00	,843	**3,02**	3,00	1,018	**3,03**	3,00	1,149
1.5. Kazne/sankcije za poresku evaziju su nesrazmjerne i neefikasne i trebaju biti daleko strožije	**3,52**	4,00	,943	**3,83**	4,00	1,062	**3,77**	4,00	1,047
1.6. Poreska evazija je u najvećem broju slučajeva nedokaziva	**3,05**	3,00	,987	**2,52**	2,00	1,070	**2,57**	2,00	,968
1.7. Poreska evazija je jedan od važnijih pokazatelja pada sistema vrijednosti	**3,60**	4,00	,885	**3,63**	4,00	,875	**3,86**	4,00	,899
1.8. Nizak nivo ličnih prihoda utiče na visinu poreske evazije	**3,76**	4,00	,906	**3,33**	4,00	1,068	**3,31**	4,00	1,197
1.9. Poreska evazija je uobičajena pojava za zemlje u tranziciji	**3,93**	4,00	,640	**3,51**	4,00	,963	**3,52**	4,00	1,061
1.10. Mediji pretjeruju kad ukazuju na štetnost poreske evazije	**2,60**	3,00	,964	**2,54**	2,00	,937	**2,42**	2,00	1,025
1.11. Rijetki su poreski obveznici koji nisu počinili poresku evaziju	**3,33**	3,00	,928	**3,44**	4,00	1,057	**3,34**	4,00	1,173
1.12. Poreska evazija je tradicionalno karakteristična za naš mentalitet	**3,48**	4,00	,969	**3,49**	4,00	1,035	**3,33**	4,00	1,080
1.13. Razlog za poresku evaziju je slaba edukacija	**3,21**	3,00	1,138	**2,96**	3,00	1,197	**2,95**	3,00	1,231
Opšti stav ispitanika prema poreskoj evaziji	**3,377**	3,461	0,4530	**3,271**	3,231	0,482	**3,246**	3,231	0,41545

	21 – 30 godina			Više od 30 godina			Hi-kvadrat	p vrijednost
	Prosjek	Medijana	Standardna devijacija	Prosjek	Medijana	Standardna devijacija		
1.1. Poreska evazija predstavlja najveću kočnicu razvoja društva	**3,48**	4,00	1,163	**4,00**	4,00	,953	6,853	0,144
1.2. Osobe sa „visokim pozicijama" ne pridržavaju se normi u društvu	**4,04**	4,00	,885	**3,76**	4,00	1,304	2,590	0,629
1.3. Poreska evazija je podjednako prisutna u svim zemljama	**2,71**	2,00	1,091	**2,91**	3,00	1,138	6,156	0,188
1.4. O poreskoj evaziji negativno govore samo ljudi koji nisu direktno odgovorni za njeno suzbijanje	**2,88**	3,00	,983	**3,38**	4,00	1,181	5,847	0,211
1.5. Kazne/sankcije za poresku evaziju su nesrazmjerne i neefikasne i trebaju biti daleko strožije	**3,92**	4,00	,813	**3,56**	4,00	1,078	6,376	0,173
1.6. Poreska evazija je u najvećem broju slučajeva nedokaziva	**2,69**	2,00	1,058	**2,50**	2,00	1,108	9,997	**0,040**
1.7. Poreska evazija je jedan od važnijih pokazatelja pada sistema vrijednosti	**4,02**	4,00	,641	**3,76**	4,00	,855	9,448	0,051
1.8. Nizak nivo ličnih prihoda utiče na visinu poreske evazije	**3,15**	4,00	1,144	**3,32**	4,00	1,147	6,473	0,166
1.9. Poreska evazija je uobičajena pojava za zemlje u tranziciji	**3,67**	4,00	1,061	**3,68**	4,00	1,093	4,888	0,299
1.10. Mediji pretjeruju kad ukazuju na štetnost poreske evazije	**2,15**	2,00	,978	**2,76**	2,00	1,046	13,204	**0,010**
1.11. Rijetki su poreski obveznici koji nisu počinili poresku evaziju	**3,31**	4,00	1,076	**3,68**	4,00	,976	3,617	0,460
1.12. Poreska evazija je tradicionalno karakteristična za naš mentalitet	**3,37**	4,00	1,103	**3,15**	4,00	1,209	2,249	0,690
1.13. Razlog za poresku evaziju je slaba edukacija	**2,77**	2,00	1,165	**2,85**	2,00	1,184	3,593	0,464
Opšti stav ispitanika prema poreskoj evaziji	**3,244**	3,231	0,448	**3,333**	3,231	0,403	4,026	0,402

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PREGLEDNI NAUČNI RAD / OVERVIEW SCIENTIFIC PAPER

NET EXPORTS OF THE EUROPEAN POST-TRANSITION COUNTRIES: THE DYNAMIC FACTOR APPROACH

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Abstract: *The paper brings the common and unobserved factor of net exports of the six European post-transition countries, namely Czech Republic, Slovakia, Slovenia, Hungary, Latvia and Romania. The data sample consists of the quarterly net exports time series for the period 1996q1 – 2017q2. The results out of the dynamic factor analysis (DFA) revealed that one hidden random walk explains 53.17% of temporal variation in net exports of the observed sample countries. The relationship between unobserved hidden factor and net exports of Czech Republic, Slovakia, Slovenia and Hungary is found to be positive while the Romanian net export was negatively affected. However, the unobserved factor identified in this paper cannot explain the net export in case of Latvia.*

INTRODUCTION

In the last two and half decades European post-transition countries have experienced trade and financial liberalization followed by the deficit in net exports. Eventually, most of the European post-transition countries joined the European Union (EU). Taking into account the similar history and common path regarding EU membership, the international trade of the European post-transition countries has been under the same external factors. The relaxing of capital constraints followed by inflow of foreign loans boosted the consumption. Consequently, the increase in consumption supported imports demand and current account deficit (Aristovnik 2008; Zakharova 2008; Bakker and Gulde 2010; Obadić et al., 2014). Haltmaier (2014) pointed out the sizable reduction in global external

imbalance followed by the financial crisis that stared in 2007. Consequently, it is reasonable to assume the similar dynamic in international trade of the European post-transition countries. The paper observes the net exports of the six European post-transition countries, namely Czech Republic, Slovakia, Slovenia, Hungary, Latvia and Romania and explains to what extent the net exports of the sample countries can be explained by common trends.

The remainder of this paper is organized as follows: Section 2 briefly summarizes existing literature related to the topic under consideration. Section 3 presents research data and methodology, while Section 4 empirical analysis. The final section provides an overview of the main findings of the research.

BRIEF LITERATURE OVERVIEW

Athukorala and Bandara (1989) pointed out that the usual practice of using gross export data to analyse export performance leads to misleading conclusions due to reducing importance of primary exports in the export structure and overall export growth. Yi (1993) Pointed out the role of U.S. government purchases in explaining recent U.S. net export behaviour. Raffo (2008) showed that trade fluctuations were driven by consumption smoothing while generating pro-cyclical net trade in goods. Tagkalakis (2015) examined the case of Greece in the post 2000 period and found that a cut back in government spending boosts exports through the labour cost competitiveness channel further improving net exports. Prilepskiy (2017) analysed the case of Russia and demonstrated that in the medium term, low quality of the institutional environment in Russia hinders maintaining momentum for exports and import substitution associated with the depreciation. Germany has been one of the major trade partners and Heinze (2018) found that Germany has benefited from growth dynamics of trading partners and high income elasticities of demand for German exports indicate strong non-price competitiveness. Furthermore, a significant impact of the real exchange rate on intra-EMU exports was not detected while a stable relationship between the real exchange rate and extra-EMU exports was revealed. Bilas et al. (2016) based on a data sample for the period from 1995 to 2014 for Croatia, Romania and Latvia found that merchandise exports diversification correlated with exports development. Bilas et al(2017) established the relationship between financial development and international trade for the Case of Croatia where the international merchandise trade flows with other EU member countries was found unsustainable (Bošnjak et al., 2018). Johnston and Regan (2016) found the unsustainable divergences in external balances within European Monetary

Union (EMU) and pointed out that external imbalances did not emerge prior to EMU due to the presence of different inflation adjustment mechanisms. Stockhammer (2015) pointed out that deregulation of international financial flows has allowed countries to run larger current account deficits and for longer time periods. Using a panel regression analysis, Johnston et al (2014) demonstrated that rising differentials between public and manufacturing sector wage significantly correlated with decline of export. Furthermore, weak-governance institutions were significantly associated with more prominent decline in exports inside as opposed to outside EMU. Smith (2001) pointed out the need for substantial long-term structural changes to the economic system. Hamm et al. (2012) employed cross-national panel regressions for a sample of 25 post-communist countries between 1990 and 2000 and found that mass privatization programs negatively affected economic growth, state capacity, and property rights protection.

The reviewed literature pointed out the diversity of net exports determinants and its dynamics. Consequently, this paper contributes to the existing literature by identifying the common factor of net export of the sample of European post-transition countries.

RESEARCH DATA AND METHODOLOGY

The paper examines the dynamics of net exports for the six European post-transition countries. The goal of the research is to identify the similarities in dynamics of net exports of the countries under consideration. The research hypothesis of this paper assumes the existence of common trend in net exports of the European post-transition countries. The sample countries to test the research hypothesis were selected based on data availability. The data sample in this paper consists of the quarterly time series of imports and exports of Czech Republic, Slovenia, Slovakia, Latvia and Romania for the period 1996q1 – 2017q2 retrieved from national bureaus of statistics. The observed variable for each country is net exports (NX) in (natural) log levels given in the equation (1):

$$NX_t = \log(EXP_t) - \log(IMP_t) \qquad (1)$$

The net export series from equation (1) are z-scored for each of the sample countries. Following Harvey (1989), this paper employs the dynamic factor analysis (DFA) to detect underlying trends among the set of net exports time series for the sample countries. Using DFA the paper explains temporal variation in a set of six observed net exports time series using linear combinations of a set of hid-

den random walks, where $m < 6$. The structure of the DFA model is given in the equation (2) and (3):

$$\boldsymbol{x_t = x_{t-1} + e1_t},\ \boldsymbol{e1_t} \sim MVN(0, \boldsymbol{Q}) \qquad (2)$$
$$\boldsymbol{y_t = Zx_{t-1} + a + e2_t}\ \boldsymbol{e2_t} \sim MVN(0, \boldsymbol{R}) \quad (3)$$

Where $\boldsymbol{y_t}$ in the equation (3) presents the vector of the observed series, $\boldsymbol{x_t}$ in the equation (2) vector of hidden trends, $\boldsymbol{Z}$ in the equation (3) factor loadings and $\boldsymbol{a}$ in the equation (3) presents the offsets. Therefore, the observations $\boldsymbol{y_t}$ are modelled as the linear combination of hidden trends and factor loadings. The expected value of the hidden trends $\boldsymbol{x_t}$ is obtained using Kalman filter (Kalman, 1960) and to determine the number of trends Ahn and Horenstein (2013) test is employed.

The **R** matrix in equation (3) is specified as same variances and no covariance (diagonal and equal), different variances and no covariance (diagonal and unequal), same variances and same covariance (equal var- cov) and different variances and covariances (unconstrained). To determine the proper specification, the small sample size corrected AIC (AICc) is used.

There are many different but equivalent solutions to the dynamic factor loadings and they can be related to each other by a rotation matrix **H.** The paper employs varimax rotation to determine the loadings and trends.

RESEARCH RESULTS AND DISCUSSIONS

Following Ahn and Horenstein (2013) test, the one factor was found and proportion of variation explained by the one principal components amounts 53.17%. Following methodology presented in the section Research data and methodology the different specification of **R** matrix in equation (3) are estimated and tested. The results are summarized in Table 1.

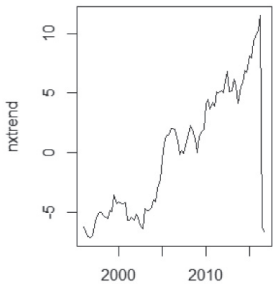
Table 1. Small sample size corrected AIC (AICc) for different specifications of **R** matrix

R	m	log likelihood	AICc
diagonal and equal	1	-535.3812	1084.9937
diagonal and unequal	1	-457.3267	939.3048
equal var- cov	1	-426.3826	869.0632
unconstrained	1	-359.8043	776.8672

Source: Authors

As suggested by the results in Table 1, the lowest value of small sample size corrected AIC (AICc) was found when **R** matrix in equation (3) was unconstrained and unobserved common trend after varimax rotation is illustrated in Figure 1.

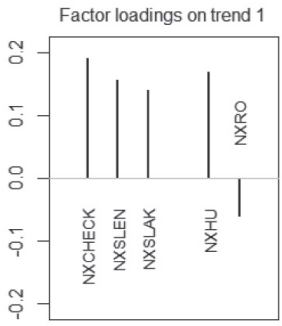
Figure 1. Unobserved trend (following varimax rotation) from the model fit to the net exports series of the sample countries



Source: Authors

As illustrated in Figure 1, common unobserved trend turned to be positive after the financial crisis that stared in 2007. Therefore, the net export of the sample countries generally turned to be positive after the crises. However, the detected unobserved trend does not explain the same portion of the each single sample country. Rotated factor loadings for the model are shown in Figure 2 and we chose to plot only those loadings that are greater than 0.05. All of the rotated factor loadings for the model are presented in Table 2 in the Appendix.

Figure 2. Factor loadings (following varimax rotation) from the model fit to the net exports series of the sample countries



Source: Authors

Following the factor loadings on trend in Figure 2, some of the net exports series had much better overall fits than others. The factor loadings for Latvia amounts

-0.0226 and therefore was not given in the Figure 2. The highest positive factor loading was found for the case of Czech Republic, Hungary, Slovenia and Slovakia while the factor loadings in case of Latvia and Romania was negative. Czech Republic, Hungary, Slovenia, Slovakia and Latvia joined the European Union in 2004. However, the case of Latvia differs in terms of net exports dynamics and dynamics of net exports in case of Latvia seems to be more similar to the dynamics of net exports in case of Romania. Even tough Romania joined the European Union three years later (in 2007). As introductory stated, after the financial crisis that stared in 2007 the reduction in external imbalance has stared (Haltmaier, 2014). Consistently, unobserved trend identified in this paper represents the dynamics of change for the countries under consideration. Furthermore, the deficit reduction is not prominent in case of Latvia and Romania. Consistently with the results from this paper, contemporary literature points out the existence of macroeconomic imbalance in Latvia and Romania. Awokuse (2007) examined the causal relationship between imports exports and economic growth for Bulgaria, Czech Republic, and Poland. The results for the Czech Republic revealed the effects from both exports and imports to economic growth pointing out not only the role of exports but imports as well. Sağlam and Egeli (2018) Employed dynamic panel data approach on the annual data for the period between 1990 and 2015 for 16 European transition countries to examine the role of exports and domestic demand for economic growth of the considered countries. The results for Poland and Czech Republic indicated the more prominent effects from domestic demand to economic growth comparing to effects from exports to economic growth.

On the sample of panel data for Romania, Bulgaria, Hungary, Czech Republic, Croatia and Poland, Motofei (2017) analysed the trends in GDP dynamics while focusing on recent periods. The results for Czech Republic showed the most convincing upward trends among considered countries while Hungary and Romania experienced sudden drops in the GDP level. GDP growth is under pressure of household's consumption for all of the sample countries. The contribution of external balance for GDP growth of Czech Republic ranges between 5.28 and 7.50%. The upward trend of contribution from external balance was reported for Hungary amounting about 10%, while for Romania the contribution of external balance to GDP growth was negative. Cetin and Ackrill (2018) pointed out that Slovakia's economy is one of the most open economies in the world and based on quarterly data from 1997Q1 to 2014Q4 supported the positive effects from exports as well as from imports on the economic growth in Slovakia. Pancenko and Ivanova (2016) pointed out that imports dominated over Latvia's international trade while after 2013 the deficit in international trade decreased gradu-

ally due to accelerated growth of exports. Franc and Peulić (2017) examined the trade flows of Slovenia based on the framework of its sustainability and reported importing to export as the trade pattern that dominates.

The unobserved common factor identified in this paper remains to be explained. However, funded on economic theory there might be some possible explanations. Theory of international economics suggests several approaches to explain current account dynamics and consequently the net exports. Followed by financial crises the sample countries has experienced the contraction of aggregate output. Therefore, the absorption approach (Harberger, 1950) that explains the change in current account by the changes in domestic demand and domestic output might be followed to explain unobserved trend detected in this paper. Another view of current account balance observe the imbalances between the demand for and supply of money stock as the one that explains current account balance (Polak, 1957). In the extensive literature overview Kauko (2014) found that banks borrow internationally and finance domestic lending while boosting the current account deficit and a real estate bubble. Therefore, excessive money supply followed by financial and trade liberalization in the sample countries according to monetary approach (Polak, 1957) needs to be taken into account to explain unobserved trend detected in this paper. Eventually, following Marshall (1923), Robinson (1937) and Lerner (1944) the elasticity of supply and demand for foreign exchange and foreign goods can be considered to explain detected unobserved trend. Furthermore, the research results points out the need for measures in Latvia and Romania to improve manufacturing conditions and support the tradable sector.

CONCLUDING REMARKS

There are several conclusions that can be drawn out of the research presented in this paper. Firstly, the dynamic factor analysis (DFA) revealed that one hidden random walk explains 53.17% of temporal variation in net exports of the observed sample countries. However, the relationship between unobserved hidden factor and net exports of Czech Republic, Slovakia, Slovenia and Hungary is found to be positive while the net export in case of Romania and Latvia was negatively affected. In line with previous findings, the research results indicate the existence of prominent macroeconomic imbalances in Latvia and Romania and point out the need for measures to improve manufacturing conditions and support the tradable sector. Secondly, the unobserved hidden trend detected in this paper turned to be positive after the 2007 that corresponds to the financial

crises. Therefore, impact of the global financial crisis varied across sample countries. While Czech Republic, Slovakia, Slovenia and Hungary experienced the reduction of its external imbalances the international trade deficit remained in Latvia and Romania Eventually, the theoretical explanations of the detected unobserved trend might be found following the monetary and absorption approach as well as following elasticity of supply and demand for foreign exchange and foreign goods. However, the empirical explanation of the unobserved hidden trend detected in this paper remains to be further examined.

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APPENDIX

Table 2. Rotated factor loadings for the model

	ML.Estimates	Std. Error	low.CI	up.CI
Z.11	0.1905	0.03067	0.13040	0.25063
Z.21	0.1565	0.02815	0.10129	0.21163
Z.31	0.1395	0.02706	0.08650	0.19256
Z.41	-0.0226	0.02206	-0.06578	0.02067
Z.51	0.1694	0.02928	0.11204	0.22681
Z.61	-0.0598	0.02295	-0.10480	-0.01483
R.(1,1)	0.0367	0.00968	0.01771	0.05566
R.(2,1)	-0.0520	0.01654	-0.08437	-0.01953
R.(3,1)	-0.0141	0.01878	-0.05093	0.02268
R.(4,1)	-0.0332	0.02588	-0.08394	0.01749
R.(5,1)	-0.0361	0.01423	-0.06403	-0.00824
R.(6,1)	-0.0251	0.02490	-0.07394	0.02366
R.(2,2)	0.3463	0.05625	0.23605	0.45655
R.(3,2)	0.1466	0.04959	0.04941	0.24381
R.(4,2)	0.4185	0.07988	0.26190	0.57502
R.(5,2)	0.1590	0.03853	0.08343	0.23448
R.(6,2)	0.4255	0.07798	0.27266	0.57836
R.(3,3)	0.4776	0.07636	0.32796	0.62730
R.(4,3)	0.1494	0.07785	-0.00323	0.30194
R.(5,3)	0.1358	0.04225	0.05302	0.21864
R.(6,3)	0.2682	0.07861	0.11415	0.42229
R.(4,4)	0.9745	0.15223	0.67611	1.27283
R.(5,4)	0.2524	0.06114	0.13253	0.37220
R.(6,4)	0.7431	0.13189	0.48459	1.00160
R.(5,5)	0.2356	0.03963	0.15794	0.31327
R.(6,5)	0.2660	0.05974	0.14887	0.38306
R.(6,6)	0.8940	0.13992	0.61982	1.16828

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KRATKO SAOPŠTENJE / SHORT REPORT

IZRAŽAVANJE KORISTI INVESTICIONOG PROJEKTA NA GOTOVINSKOJ OSNOVI

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Rezime: *Ukoliko se želi realno sagledati proces investiranja i ocijeniti opravdanost investicionog projekta, neophodno je, s aspekta preduzeća ali i šire društvene zajednice, identifikovati i analizirati efekte eksploatacije određene investicije. Ovim radom tretiraće se složena problematika donošenja adekvatnih investicionih odluka izražavajući korist investicionog projekta na gotovinskoj osnovi. Da bi se obezbijedila realizacija osnovnih strateških ciljeva preduzeća i time osigurao njegov rast i razvoj, neophodno je donijeti odluke kojima će preduzeće svoje investicione aktivnosti usmjeriti na investicione projekte čiji će efekti obezbijediti najveću rentabilnost ulaganja. S obzirom na složenost investicionih aktivnosti, materijalni značaj, vremensku distancu, ograničenost resursa, rizike i neizvjesnosti te ostale faktore uticaja, nameće se potreba upravljanja investicionim projektima. Cilj ovog rada je da, analizirajući faze budžetiranja i metode koje se u tom procesu koriste za ocjenu rentabilnosti investicionih ulaganja, ukaže na značaj ovog procesa kao presudnog faktora u donošenju investicionih odluka.*

Ključne riječi: *korporativne finansije, investicije, produktivnost, rast, planiranje investicija.*

Jel klasifikacija: *O16, E22, 047, O4, G31*

UVOD

Ocjena opravdanosti realizacije investicionih projekata u svrhu donošenja investicionih odluka je veoma složen postupak koji treba da obuhvati sve relevantne faktore. Rentabilnost u finansijskom smislu označava prirast kapitala koje preduzeće ostvaruje poslovanjem u određenom periodu, a izražava se finansijskom stopom prinosa [Jakupović, 2007: 160]. Izražavanje koristi investicionog projekta na obračunskoj (akrualnoj) osnovi pruža okviran uvid u opravdanost projekta jer se prilikom analize ne posmatra cjelokupni ekonomski vijek projekta, već samo jedna reprezentativna godina. Budući da nas interesuje opravdanosti realizacije investicionih projekata u cjelini, potrebno je analizirati projekcije novčanih to-

kova tokom svih godina njegovog ekonomskog vijeka. Izražavanje koristi investicionog projekta na gotovinskoj osnovi podrazumijeva upotrebu pokazatelja koji se odnose na sve godine ekonomskog vijeka investicije čime se obezbjeđuje bolji uvid u novčane tokove investicionih projekata.

Metode koje svoj obračun prilikom ocjene rentabilnosti investicionog projekta baziraju na podacima zasnovanim na projekcijama diskontovanih novčanih tokova, ne samo da unose neophodan faktor dinamičnosti u proračun tako što zamjenjuju računovodstvene pozicije projekcijama novčanih tokova već uključuju i neophodan faktor vremenske vrijednosti novca.

METODOLOGIJA ISTRAŽIVANJA

Predmet istraživanja ovog rada je izražavanje koristi investicionog projekta na gotovinskoj osnovi u svrhu budžetiranja kapitala, kao osnovnog instrumenta pri donošenju investicionih odluka kojim se obezbjeđuje izbor najrentabilnijih investicionih projekata za preduzeće. Budžetiranje kapitala je postupak donošenja odluke o dugoročnim investicijama, što podrazumijeva dugoročne finansijske odluke. Donošenje odluke o investicijama odnosi se na alociranje znatne sume novca u uslovima rizika i neizvjesnosti, od kojeg se efekti očekuju u dužem periodu. S tim u vezi, nastala je potreba za analizom i izučavanjem svih elemenata koji mogu uticati prilikom donošenja finansijskih odluka, odnosno za korišćenjem naučnih metoda u donošenju finansijskih odluka. Savremeni pristup upravljanju finansijama preduzeća ne podrazumijeva samo pitanje kako obezbijediti kapital već i kako ga što rentabilnije alocirati radi ostvarivanja dugoročnih ciljeva preduzeća. Najznačajnije prelomne tačke u vezi sa odlukom o alociranju kapitala odnose se na dugoročnost realizacije investicija, izbor adekvatnog investicionog kriterijuma, odnosno cijene kapitala. Odluke o dugoročnom investiranju su najsloženije finansijske odluke u preduzeću, a tehnika budžetiranja kapitala služi kao instrument kojim se provjerava validnost kandidovanih investicionih projekata.

Budžetiranje kapitala može se posmatrati kao proces u kome kandidovane investicione aktivnosti, pripremljene u obliku investicionih planova, dobijaju svoj formalni kvantitativni oblik. Istovremeno, kroz proces budžetiranja kapitala definišu se obaveze za ostvarenje ciljeva i ovlašćenja po tom osnovu. U vezi s tim može se reći da srž kapitalnog budžetiranja čini neizvjesnost u pogledu: očekivane dinamike efekata od ulaganja, dužine vijeka investicionog ulaganja, kretanja kamatni stopa, aktivnosti konkurenata, a u telekomunikacionoj industriji, prije svega, brzine tehnoloških promjena. Cilj ovog istraživačkog rada je da ukaže na

važnost procesa budžetiranja kapitala prilikom izbora investicionih projekata i donošenja investicionih odluka, odnosno da ukaže na prednosti i nedostatke metoda koje se u tom procesu koriste za ocjenu rentabilnosti investicionih ulaganja. Obzirom da odluke o investicionoj aktivnosti mogu presudno uticati na sudbinu preduzeća, njegovu konkurentsku poziciju i učešće na tržištu, smjer daljeg tehnološkog razvoja, pa čak i na njegov opstanak, smatramo korisnim da praktičnom analizom studija ekonomske opravdanosti investicionih projekata na primjerima telekomunikacionog preduzeća pokažemo aktuelne metode ocjene rentabilnosti investicija.

Zahvaljujući kompleksnosti teme ovog istraživačkog rada, prilika je da se primijene različite metode istraživanja. Da bi se pružio odgovor na osnovni problem ovog rada, koristiće se opšte metode naučnog istraživanja, i to metode analize, sinteze, studija slučaja, te opšte didaktičke metode. Budući da ovo istraživanje poprima oblike dinamičke analize (posmatra aktivnosti u periodu od pet godina) i korelacijske analize (u svrhu ispitivanja međusobne zavisnosti različitih metoda investiranja), tehnike koje će se koristi u svrhu prikupljanja podataka za potrebe ovog istraživačkog rada, osim klasične tehnike prikupljanja i obrade podataka putem direktne komunikacije sa relevantnim organizacionim dijelovima preduzeća, tu su i tehnika posmatranja, opažanja, testiranja, zaključivanja.

Metodološki gledano, identifikovali smo sve relevantni istraživačke faktore:
- problem istraživanja ovog rada formulisan je pitanjem, da li izbor metoda izražavanja koristi investicionog projekta u procesu budžetiranje kapitala presudno utiče na izbor investicionih projekata;
- predmet istraživanja, apsolviran ovim radom je izražavanje koristi investicionog projekta na gotovinskoj osnovi u svrhu budžetiranja kapitala;
- cilj istraživanja jeste da se na naučan i pragmatičan način ukaže na važnost procesa budžetiranja kapitala prilikom izbora investicionih projekata i donošenja investicionih odluka, odnosno da se ukaže na prednosti i nedostatke metoda koje se u tom procesu koriste za ocjenu rentabilnosti investicionih ulaganja;
- istraživačka hipoteza, na osnovu definisanog problema istraživanja, predmeta i ciljeva, postavljena je kao tvrdnja daj e budžetiranja kapitala, a posebno izbor metoda izražavanja koristi investicionog projekta predstavlja presudan faktor donošenja investicionih odluka;
- metode istraživanja, korištene u svrhu analize predmeta istraživanja su metoda studije slučaja i dijalektička metode, za čije potrebe je bilo potrebno prikupiti ulazne podatke a na osnovu kojih treba smo interpretirali dobijene

rezultate istraživanja
- tehnike istraživanja za potrebe ovog istraživanja, obzirom na izražen su posmatranje, opažanje, testiranje.

TEORIJSKI KONCEPT

Obzirom na aktuelnost teme i materijalnu značajnost investicionih aktivnosti, analizirali smo literaturu respektabilnih autora iz oblasti poslovnih finansija, a posebno budžetiranja kapitala. Teoretičari se kontinuirano bave izučavanjem ove oblasti kako bi pronašli najkorisniju metodu prepoznavanja najrentabilnijih investicionih projekata. Proces budžetiranja kapitala i izbora najrentabilnijih investicionih projekata je u neposrednoj korelaciji s realizacijom strategije razvoja preduzeća. Odgovornost uprave za uspjeh preduzeća postaje sve značajnija, naročito prema akcionarima i kreditorima koji su u preduzeće uložili veliki kapital.

S tim u vezi, nastala je potreba za analizom i izučavanjem svih elemenata koji mogu uticati prilikom donošenja finansijskih odluka, odnosno za korišćenjem naučnih metoda u donošenju finansijskih odluka, što je uslovilo dalji razvoj teorije finansijskog upravljanja kao naučne discipline. Savremeni pristup upravljanju finansijama preduzeća ne podrazumijeva samo pitanje kako obezbijediti kapital već i kako ga što rentabilnije alocirati radi ostvarivanja dugoročnih ciljeva preduzeća. Osnovni pokretač investicionih aktivnosti je tržište koje diktira konkurentski položaj preduzeća a time i njegov opstanak. Stoga je i opravdana tvrdnja da investicije predstavljaju ulaganje sredstava u cilju ostvarenja određenog prinosa koji kompenzuje ulaganja za žrtvu odricanja od potrošnje, preuzete rizike i stopu inflacije [Đuričin, Kaličanin, Janošević, 2009: 461].

Ulaganjem u izabrane investicione projekte, investitori očekuju da ostvare zahtijevanu stopu prinosa, koja mora biti viša od prethodno utvrđenog kriterijuma. U tu svrhu neophodno je da se respektuje vremenska vrijednost novca, koja se zasniva na uvjerenju da novčana jedinica danas ima veću vrijednost od novčane jedinice u nekom budućem vremenskom periodu [Ivanišević, 2009: 169]. Proučavajući i analizirajući investicije u dužem vremenskom periodu, Damodaran govori o intuitivnoj osnovi vremenske vrijednosti novca, pri čemu razliku vrijednosti jedne novčane jedinice danas i u budućnosti objašnjava najprostijim računom deponovanog novca koji će putem kamate na depozit deponentu donijeti prinos [Damodaran, 2007: 44]. Takođe, daje nam detaljnu podjelu metoda za ocjenu rentabilnosti investicija s obzirom na način mjerenja prinosa i troškova investicionog projekta kojom se jasno razlikuje metode za donošenje odluka na

osnovu računovodstvenih (obračunskih) prihoda, metode za donošenje odluka na osnovu novčanih tokova i metode za donošenje odluka u vezi s vremenski ponderisanim novčanim tokovima, ali nam isto tako ukazuje na osnovne karakteristike dobrog metoda ocjene rentabilnosti investicionog ulaganja, kakve su fleksibilnost, konzistentnost, iniciranje i poticaj osnovnog cilja preduzeća [Damodaran, 2007: 285].

Budući da različiti izvori finansiranja imaju različitu cijenu, da bi se izračunala prosječna cijena kapitala, neophodno je utvrditi cijene kapitala pojedinačnih izvora finansiranja. S tim u vezi, za potrebe analize investicionih projekata „A" i „B" izračunali smo cijena duga od 8% i cijena sopstvenog kapitala od 13%), a potom i prosječna cijena kapitala od 12%. Za ove potrebe korištene su formule u skladu sa [Gitman, Zutter, 2015: 364-379]. Takođe, prilikom izračunavanja koristi investicionih projekata „A" i „B" korištene su već dostupne formule za metode neto sadašnje vrijednosti, indeksa profitabilnosti i internu stopu prihoda [Gitman, Zutter, 2015: 403-407.].

Konačno, ukazaćemo na zaključak autora provedenih empirijskih istraživanja na ovu temu na teritoriji Sjedinjenih Država koji na osnovu provedenih istraživanja zaključuju da je budžetiranje kapitala najvažnija odluka s kojom se susreću finansijski menadžeri [Gitman, Maxeell, 1987: 41-50.], ali i na zaključak autora analize provedene na području azijsko-pacifičke regije da je usvajanje i korišćenje budžetiranja kapitala kao procesa u donošenju odluke o investiranju od suštinskog značaja za opstanak i čvrst uspjeh preduzeća [Chan, Haddad, Sterk, 2011: 6].

NETO SADAŠNJA VRIJEDNOST

Metoda neto sadašnja vrijednost, kao apsolutna mjera rentabilnosti investicionih projekata, predstavlja savremenu, dinamičku metodu ocjene rentabilnosti investicionih ulaganja, koja se bazira na novčanim tokovima i respektuje vremensku vrijednost novca. Proračun zahtijeva da se odredi odgovarajuća diskontna stopa (najčešće prosječna cijena kapitala preduzeća) i procijeni ekonomski vijek trajanja investicije. Investicioni projekti zahtijevaju angažovanje znatnog kapitala, a sve u cilju ostvarivanja zarade. S jedne strane, aktivnost do momenta aktiviranja investicije, u zavisnosti od njene vrste, može da bude mjerena danima, pa i godinama, dok je, s druge strane, ekonomski vijek trajanja investicije duži, efektuiranje traje kraće ili duže od ekonomskog vijeka trajanja investicije. U različitim tačkama vremena realizuju se različiti prilivi i odlivi novca zbog čega se ne mogu porediti bez uticaja korektivnog faktora u obliku diskontne stope koji prilive i

odlive u različitim vremenskim tačkama prevode na sadašnju vrijednost. Uglavnom se inicijalni izdaci dešavaju na početku perioda u sadašnjoj vremenskoj tački za koju nije potrebno diskontovanje, dok se pretpostavlja da prva efektuiranja slijede u prvom narednom periodu. Naravno, svaki investicioni projekat je poseban i tako ga treba i posmatrati.

Neto sadašnja vrijednost se definiše kao razlika između sadašnje vrijednosti očekivanih godišnjih neto novčanih tokova eksploatacije projekta (primanje gotovine) i sadašnje vrijednosti kapitalnog izdatka (izdavanje gotovine), pri čemu je diskontna stopa prethodno utvrđena u obliku prosječne cijene kapitala preduzeća ili neke druge zahtijevane stope prinosa [Ivanišević, 2009: 174]. Dakle, prvo je potrebno novčane tokove svesti na jednu vremensku tačku, a to je sadašnji vremenski period, odnosno period inicijalne investicije. Potom se od akumulirane sadašnje vrijednosti priliva oduzimaju odlivi, a razlika predstavlja neto sadašnju vrijednost. Na bazi tako poznatih informacija neto sadašnja vrijednost se izračunava jednačinom [Gitman, Zutter, 2015: 403]:

$$NPV = \sum_{t=1}^{n} \frac{CF_t}{(1+r)^t} - CF_0$$

pri čemu su:
- NPV (Net Present Value) – neto sadašnja vrijednost,
- CFt (Cash Flow) – sadašnja vrijednost neto novčanih tokova,
- CF0 (Cash Flow) – sadašnja vrijednost inicijalnog investicionog ulaganja,
- r (Discount Rate) – prosječna cijena kapitala, diskontna stopa.

Nerijetko investiciono ulaganje može da se proteže na više godina, kada je prvo potrebno izračunati sadašnju vrijednost izdataka, potom sadašnju vrijednost priliva, i tek onda izračunati neto sadašnju vrijednost kao razliku sadašnje vrijednosti svih priliva i sadašnje vrijednosti svih odliva. Otuda i alternativna jednačina neto sadašnje vrijednosti [Mikerević, 2010: 326]:

$$NPV = CFI - CFO,$$

gdje je CFI (Cash Inflow) – priliv novca a CFO (Cach Outflow) – odliv novca.

Na primjeru investicionog projekta „A“ i „B“ planirana je izgradnja baznih stanica u cilju pokrivanja signalom mobilne telefonije regija na kojima se u bliskoj budućnosti očekuje potreba za ovom vrstom telekomunikacionih usluga. Primjeri investicionih projekata čiju ćemo isplativost u ovom radu detaljno analizirati odnose se na dva zasebna, nezavisna projekta. Projekti su kandidovani na dvije

različite lokacije, čije su specifičnosti u smislu prihoda po osnovu broja korisnika i obima usluga, te troškova koja proizilaze iz njihove aktivnosti, prikazane kroz ukupno planirane prilive i odlive u periodu od pet godina. Dakle, analiziramo isplativost dva istovrsna, nezavisna investiciona projekta. Izgradnja i puštanje u rad bazne stanice u prosjeku traje šest mjeseci (period u kome se pribavljaju potrebne dozvole, rješavaju imovinsko-pravni poslovi, nabavlja oprema, građevinski osposobljava teren i konačno instalira oprema). Inicijalna investicija dešava se u nultoj godini, a odmah nakon aktiviranja generišu se novčani prilivi, pri čemu za investicioni projekat „A" investicija iznosi 192.992, a za projekat „B" 92.023 konvertibilnih maraka. Pošto se vrijednosti svih novčanih tokova svode na sadašnju vrijednost, novčani tokovi u nultoj godini nisu diskontovani. Ekonomski vijek trajanja bazičnog dijela investicije u slučaju oba projekta je pet godina (tu su i građevinski objekti i elektroenergetska postrojenja čija je stopa amortizacije znatno niža). U periodu od pet godina za projekat „A" se očekuje neravnomjeran priliv u iznosu od 637.102, a kod projekta „B" priliv u ukupnom iznosu od 321.057 konvertibilnih maraka.

Tabela 1. Očekivani priliv za investicione projekte „A" i „B"

	1	2	3	4	5	∑
Ukupno priliv "A"	169,436	163,838	121,889	100,905	81,035	637,102
Ukupno priliv "B"	22,841	51,736	69,034	83,636	93,809	321,057

Izvor: Autorova obrada podataka

Takođe, uvidom u troškove i očekivana kretanja troškova, projekcija je da će u periodu od pet godina za projekat „A" biti utrošeno 208.257, a za projekt „B" 80.258 konvertibilnih maraka.

Tabela 2. Očekivani odliv za investicione projekte „A" i „B"

	1	2	3	4	5	∑
Ukupno odliv "A"	40,389	43,676	42,210	41,283	40,699	208,257
Ukupno odliv "B"	13,005	15,301	16,800	17,605	17,547	80,258

Izvor: Autorova obrada podataka

Respektujući tehničko-tehnološku zastarjelost, konkurentnost i dosadašnje iskustvo u vezi s vremenom korišćenja sajtova bežične pristupne mreže, realnost je da ova vrsta investicije svoj efekat treba dati u prve dvije godine korišćenja. Investicija se u potpunosti finansira sopstvenim sredstvima. Kao diskontni faktor, za

oba projekta koristi se prosječna ponderisana cijena kapitala, koja odgovara stopi neto prinosa na sopstveni i iznosi 13%.

Tabela 3. Obračun neto sadašnje vrijednosti investicionog projekta „A"

Godina	Neto novčani tok	Diskontni faktor	Sadašnja vrijednost
1	2	3	4=2 x 3
1	129,047	0.88496	114,201
2	120,162	0.78315	94,105
3	79,679	0.69305	55,222
4	59,622	0.61332	36,567
5 + rezidualna vrijednost	103,837	0.54276	56,359
1. Sadašnja vrijednost (od 1 do 5)			356,454
2. Vrijednost investicije			192,992
3. Neto sadašnja vrijednost (1-2)			163,462
4. Stopa neto sadašnje vrijednosti (3/2)*100			85%

Izvor: Autorova obrada podataka prema projektu „A"

NPV = CFI – CFO = 356.454 KM – 192.992 KM = 163.462 KM.

Investicioni projekat „A" daje pozitivnu neto sadašnju vrijednost koja preduzeću obezbjeđuje mnogo veću zarada od zahtijevane stope prinosa. Može se zaključiti da je investicioni projekat „A" isplativ već u drugoj godini, odnosno za jednu i po godinu eksploatacije. Koristeći isti način obračuna, u narednoj tabeli izračunata je neto sadašnja vrijednost za investicioni projekat „B".

Tabela 4. Obračun neto sadašnje vrijednosti investicionog projekta „B"

Godina	Neto novčani tok	Diskontni faktor	Sadašnja vrijednost
1	2	3	4=2 x 3
1	9,836	0.88496	8,704
2	36,435	0.78315	28,534
3	52,234	0.69305	36,201
4	66,031	0.61332	40,498
5 + rezidualna vrijednost	116,141	0.54276	63,037
1. Sadašnja vrijednost (od 1 do 5)			176,974
2. Vrijednost investicije			92,023
3. Neto sadašnja vrijednost (1-2)			84,951
4. Stopa neto sadašnje vrijednosti (3/2)*100			92%

Izvor: Autorova obrada podataka prema projektu „B"

NPV = CFI – CFO = 176.974 KM – 92.023 KM = 84.951 KM

U slučaju investicionog projekta „B" on postaje isplativ tek poslije tri godine eksploatacije što u kontekstu tehnološke zastarjelosti investicije i konkurencije na tržištu može biti problematično. Iz pomenutih primjera se uočava da investicioni projekat „B", kao i projekat „A" obezbjeđuju znatno veću zaradu od zahtijevane stope prinosa. Budući da su oba investiciona projekta nezavisna, da imaju isti ekonomski vijek trajanja i s respektovanjem tehnološke zastarjelosti investicija, komparacijom neto sadašnje vrijednosti se lako utvrđuje veća korisnost investicije „B" u odnosu na investiciju „A".

Što se tiče kriterijuma za prihvatanje, odnosno odbijanje investicionog projekta kod metode neto sadašnje vrijednosti, ukoliko su investicioni projekti međusobno nezavisni, visina neto sadašnje vrijednosti mora biti veća od nule, što znači da će se eksploatacijom investicije ostvariti veći prinos u odnosu na zahtijevani prinos određen prosječnom cijenom kapitala, što utiče na povećanje vrijednosti preduzeća. Ukoliko bi neto sadašnja vrijednost investicionog projekta bila manja od nule, investicioni projekat bi bio odbačen jer bi njegovo prihvatanje uzrokovalo smanjenje vrijednosti preduzeća. U slučaju kada je neto sadašnja vrijednost jednaka nuli, uloženi kapital se u potpunosti kompenzuje, a donosilac odluke je indiferentan u smislu prihvatanja ili odbijanja investicionog projekta. Za međusobno isklJučive investicione projekte sa jednakim ekonomskim vije-

kom trajanja, za prihvatanje je potrebno imati najveću neto sadašnju vrednost. Prilikom izbora najrentabilnijeg investicionog projekta između međusobno zavisnih projekata koji imaju nejednak ekonomski vijek trajanja, koristeći metod neto sadašnje vrijednosti javiće se problem komparacije efektivnosti koji se rješava korišćenjem metoda reinvestiranja novčanih tokova (razmatrani projekti se neće zamijeniti zbog čega će biti prihvaćen projekat koji obećava najveću buduću vrijednost neto novčanih tokova), metoda lanca zamjene (projekti će biti zamijenjeni, formiraće se lanac zamjena a prednost se daje projektu koji obećava najveću neto sadašnju vrijednost) i metoda ekvivalentnih godišnjih anuiteta (projekti će biti zamijenjeni, a bira se projekat s najvećim anuitetom, odnosno, projekat koji obećava i više od sadašnje vrijednosti) [Mikerević, 2010: 78]. Na osnovu prethodnog mogu se navesti osnovne prednosti metode neto sadašnje vrijednosti:

- obračun zasnovan na tokovima gotovine respektuje vremensku vrijednost novca čime obezbjeđuje uporedivost novčanih tokova u različitim vremenskim tačkama;
- uzima u obzir sve novčane tokove, obuhvata cjelokupan vijek trajanja projekta;
- efikasna metoda kod sukcesivnog ulaganja kapitala u projekte, bilo da se radi o jednokratnim inicijalnim ulaganjima prije početka eksploatacije ili ulaganjima kada je eksploatacija investicije počela;
- uklJučivanjem diskontne stope (prosječna ponderisana cijena kapitala) uzima u obzir rizik budućih novčanih tokova, a njenom promjenom kontroliše rizičnost investicionog projekta;
- kriterijum ocjene prihvatlJivosti projekta je jasan i konzistentan, kako u slučajevima međusobno nezavisnih, tako i u slučajevima međusobno zavisnih projekata, pri čemu je potrebno voditi računa o ekonomskom vijeku trajanja investicije;
- daje nedvosmislen odgovor na pitanje da li će projekat povećati vrijednost preduzeća.

Neto sadašnja vrijednost, kao metoda ocjene rentabilnosti investicionog projekta i najefikasniji alat za donošenje investicione odluke, ima i svoje nedostatke:
- komplikovan metod za nefinansijske stručnjake,
- rentabilnost investicionog projekta kvantifikuje se u apsolutnom monetarnom iznosu, a ne u relativnom iznosu u vidu stope prinosa što otežava rangiranje investicionih projekata prema njihovoj finansijskoj aktivnosti,
- fokus je na maksimiranju zarade, što u drugom planu ostavlJa pitanje raspoloživih sredstava za investiranje koja su ograničena.

U kontekstu navedenog može se ustvrditi da i u uslovima razvijenih privreda i kod nas ova metoda zauzima posebno mjesto, jer je jedna od najzastupljenijih u ocjeni rentabilnosti investicija, što i ne čudi s obzirom na kompleksnost metode koja mu obezbjeđuje naročitu preciznost. Posebno je značajna činjenica da su u ocjenu rentabilnosti uključeni novčani tokovi uz respektovanje vremenske vrijednosti novca, što investitoru daje potrebnu sigurnost prilikom ulaganja. Može se ustvrditi da je metoda neto sadašnje vrijednosti u smislu ocjene rentabilnosti kapitala najkompletniji model, budući da obuhvata sve potrebne projekcije za ove potrebe, bazira se na novčanim tokovima što joj obezbjeđuje dinamičnost i fleksibilnost u vezi s projekcijom diskontnih stopa u različitim vremenskim tačkama.

INDEKS PROFITABILNOSTI

Indeks profitabilnosti kao relativna mjera je dinamička metoda ocjene rentabilnosti investicionih ulaganja čija je osnovna osobina uvažavanje vremenske vrijednosti novca, bazirana na novčanim tokovima. Analogno apsolutnoj vrijednosti prezentovano kroz neto sadašnju vrijednost, postoji indeks profitabilnosti kao relativna mjera rentabilnosti. Indeks profitabilnosti se u literaturi često može pronaći i pod nazivom Cost-Benefit Ratio [Ivanišević, 2009: 182] (neto novčani tok ili korist, investicioni izdatak ili investicioni troškovi). Indeks profitabilnosti računamo sledećom formulom [Gitman, Zutter, 2015: 405]:

$$Indeks\ profitabilnosti = \frac{Sadašnja\ vrijednost\ neto\ novčanog\ toka}{Sadašnja\ vrijednost\ investicionog\ izdatka}$$

$$PI = \sum_{t=1}^{n} \frac{CF_t/(1+i)^t}{CF_0}$$

gdje su:
- – PI (Profitability Index) – indeks profitabilnosti,
- – CFt (Cash Flow) – sadašnja vrijednost neto novčanih tokova,
- – CF0 (Cash Flow) – sadašnja vrijednost inicijalnog investicionog ulaganja.

Ukoliko se cijeni rentabilnost nezavisnih investicionih projekata, kriterijum koji se koristi za prihvatanje investicionog projekta kod indeksa rentabilnosti zahtijeva da njegova vrijednost bude jednaka ili veća od jedan (tada je neto sadašnja vrijednost jednaka nuli ili veća od nule), što bi značilo da će eksploatacija investicionog projekta rezultirati povećanjem vrijednosti preduzeća. Suprotno tome, indeks profitabilnosti investicionog projekta koji je manji od jedan značiće odbijanje investicionog projekta. Ako se odlučuje između međusobno isključivih

investicionih projekata, prihvata se projekat sa većim indeksom profitabilnosti, ili se primjenjuje metoda neto sadašnje vrijednosti kao adekvatniji pokazatelj (apsolutna mjera) za odlučivanje.

Tabela 5. Rangiranje investicionog projekata s različitim indeksima rentabilnosti

Investicioni projekti	A	B	C	D	E
Neto investicija	100,000	200,000	500,000	800,000	1,000,000
Priliv gotovin	50,000	400,000	480,000	840,000	1,000,000
Neto sadanja vrijednost	-50,000	200,000	-20,000	40,000	0
Indeks rentabilnosti	0.50	2.00	0.96	1.05	1.00
Rang	5	1	4	2	3

Izvor: Autorova obrada podataka

Indeks profitabilnosti i neto sadašnja vrijednost daju isti odgovor na pitanje da li je projekat rentabilan, pri čemu je neto sadašnja vrijednost izražena u apsolutnom iznosu koji prikazuje zaradu investicionog projekta, dok je indeks profitabilnosti relativna vrijednost koja za vrijednost jedan i više tvrdi da je investicioni projekat prihvatljiv. Prilikom ocjene rentabilnosti investicionih projekata, indeks profitabilnosti se uglavnom koristi kao dopunski pokazatelj, a posebno kada se razlikuju po visini investicionog ulaganja, iznosu i vremenskoj dinamici priliva, te u uslovima ograničenog kapitala (pokazuje očekivani prinos na svaku uloženu novčanu jedinicu u dati projekat) [Petrović, Denčić, 2012: 182].

Na primjeru investicionih projekata „A“ koristeći podatke iz tabele 3. slijedi:

$$IP = \sum_{t=1}^{n} \frac{CF_t/(1+i)^t}{CF_0} = \frac{356.454}{192.992} = 1{,}85.$$

Indeks profitabilnosti je veći od 1, što znači da je projekat isplativ. Osim toga on pokazuje da će se inicijalna investicija vratiti 1,85 puta više nego što je samo investiciono ulaganje.

Na primjeru investicionih projekata „B“, koristeći podatke iz tabele 4., slijedi:

$$IP = \sum_{t=1}^{n} \frac{CF_t/(1+i)^t}{CF_0} = \frac{176.974}{92.023} = 1{,}92.$$

Indeks profitabilnosti je također veći od 1, što znači da je i projekat „B" isplativ, te da će se inicijalna investicija vratiti 1,92 puta više nego što je samo investiciono ulaganje. Poredeći indekse profitabilnosti projekta „A" i projekta „B" , uočljivo je da je projekat „B" donekle isplativiji. Iz navedenog se može ustvrditi da je indeks profitabilnosti još jedan koristan alat kojim se mjeri rentabilnost investicionih projekata. Budući da se prezentuje kao relativna vrijednost, pogodan je kao pomoćna ili dopunska metoda, posebno prilikom rangiranja investicionih projekata jer prikazuje prinos po investicionom ulaganju, što nije dovoljno da se prioritet daje nekom projektu s obzirom na osnovni cilj u smislu povećanja vrijednosti preduzeća.

INTERNA STOPA PRINOSA

Metoda interne stope prinosa je savremena, u svjetskoj praksi vrlo često primjenjivana, dinamička metoda ocjene rentabilnosti investicionih projekata, koja se bazira na novčanim tokovima uz respektovanje vremenske vrijednosti novca. Definiše se kao diskontna stopa koja izjednačava sadašnju vrijednost neto novčanog toka od eksploatacije projekta sa sadašnjom vrijednošću kapitalnog ulaganja, odnosno svodi neto sadašnju vrijednost projekta na nulu [Ivanišević, 2009: 183].

Da bi se sagledalo koja diskontna stopa pri određenoj realizacija nekog investicionog projekta ne donosi ni dobitke ni gubitke, odnosno pri kojoj je najmanjoj diskontnoj stopi realizacija investicionog projekta još uvijek opravdana, koristi se metoda interne stope rentabilnosti. Ova metoda polazi od zavisnosti između sadašnje vrijednosti investicija i kamatne stope kao diskontnog faktora. Interna stopa prinosa računa se formulom [Gitman, Zutter, 2015: 407]:

$$\sum_{t=1}^{n} \frac{CF_t}{(1+r)^t} = CF_0 = 0$$

pri čemu su:

CF_t (Cash Flow) – sadašnja vrijednost neto novčanih tokova,
CF_0 (Cash Flow) – sadašnja vrijednost inicijalnog investicionog ulaganja,
r (Discount Rate) – prosječna cijena kapitala, diskontna stopa – interna stopa prinosa.

Za razliku od metode neto sadašnje vrijednosti, gdje se diskontna stopa zadaje unaprijed, interna stopa rentabilnosti izračunava se s ciljem da se neto sadašnja

vrijednost svede na nulu. U kontekstu finansiranja ova informacija je dragocjena jer pokazuje koliko je maksimalno moguća kamatna stopa. Primjenjujući navedeno, prilikom utvrđivanja interne stope na primjeru projekta „A" prisutna je situacija naznačena u narednoj tabeli:

Tabela 6. Interna stopa prinosa investicionog projekta „A"

Godina	Godišnji novčani tok	Diskontna stopa 48%	Diskontna stopa 49%	Sadašnja vrijednost po diskontnoj stopi 48%	Sadašnja vrijednost po diskontnoj stopi 49%
1	2	3	4	5= (2 x 3)	6= (2 x 4)
1	129,047	0.675676	0.671141	87,194	86,608
2	120,162	0.456538	0.450430	54,859	54,125
3	79,679	0.308471	0.302302	24,579	24,087
4	59,622	0.208427	0.202887	12,427	12,097
5	103,837	0.140829	0.136166	14,623	14,139
Sadašnja vrijednost (od 1 do 5)				193,681	191,056
Vrijednost investicionog projekta "A" iznosi 192.992 KM, odakle slijedi: d=193.681-192.992 = 689 d_1=193.682-191.056= 2.625					
Interna stopa prinosa =diskontna stopa koja odbacuje nižu vrijednost od investicije + d/d_1 =				48+(689/2.625)=48+0,262=48,262%	

Izvor: Autorova obrada podataka prema projektu „A"

Na osnovu ranije projektovanih godišnjih neto novčanih tokova i rezidualne vrijednosti za investicioni projekat „A" u II finansijskim tablicama postoje diskontne stope u čijem se intervalu sadašnja vrijednost izjednačava s vrijednošću investicije, odnosno neto sadašnja vrijednost je nula.

S obzirom na visoku isplativost investicionog projekta „A", diskontna stopa se kreće od 48% do 49%, kako je prikazano u tabeli 6., iz koje se vidi da interna stopa prinosa investicionog projekta „A" iznosi 48,26%. Metoda interne stope na primjeru projekta „B" pokazuje:

Tabela 7. Interna stopa prinosa investicionog projekta „B"

Godina	Neto novčani tok	Diskontna stopa 35%	Diskontna stopa 36%	Sadašnja vrijednost po diskontnoj stopi 35%	Sadašnja vrijednost po diskontnoj stopi 36%
1	2	3	4	5= (2 x 3)	6= (2 x 4)
1	9,836	0.740741	0.735294	7,286	7,232
2	36,435	0.548697	0.540657	19,992	19,699
3	52,234	0.406442	0.397542	21,230	20,765
4	66,031	0.301068	0.292310	19,880	19,302
5	116,141	0.223014	0.214934	25,901	24,963
Sadašnja vrijednost (od 1 do 5)				94,288	91,960
Vrijednost investicionog projekta "B" iznosi 92.023 KM, odakle slijedi: d=94.288-92.023 = 2.265 d_1=94.288-91.960 = 2.328					
Interna stopa prinosa =diskontna stopa koja odbacuje nižu vrijednost od investicije + d/d_1 =				35+(2.265/2.328)=35+0,973=35,973%	

Izvor: Autorova obrada podataka prema projektu „B"

Istim postupkom kao za investicioni projekat „A" tražili smo diskontnu stopu koja će sadašnju vrijednost svesti na vrijednost investicije. U II finansijskim tablicama nalazi se diskontna stopa u čijem se intervalu neto sadašnja vrijednost investicionog projekta „B" svodi na nulu, kako je prikazano u prethodnoj tabeli. Diskontna stopa je od 35% do 36%. Interna stopa prinosa dobijena je kao zbir diskontne stope koja odbacuje nižu sadašnju vrijednost od investicije i korekcije stope do ukupne neto sadašnje vrijednosti nula, pa interna stopa za investicioni projekat „B" iznosi 35,97%.

Kao i ostale metode, i metoda interne stope prinosa mora imati definisana pravila koja se koriste prilikom donošenja odluke o izboru investicionih (nezavisnih) projekata. Realizacija investicionog projekta u okviru metode interne stope prinosa ekonomski je opravdana ukoliko je ova stopa veća od minimalne prihvatljive stope (obično se uzima kamatna stopa koja vlada na tržištu kapitala, ili kamatna stopa po kojoj se može dobiti kredit za realizaciju investicije) [Puška, 2013: 235]. Kriterijum se definiše i kao poruka da se projekat prihvati ukoliko je interna stopa prinosa jednaka cijeni kapitala. [Mikerević, 2010: 331]. Kada je interna stopa prinosa veća od minimalne prihvatljive stope, odnosno minimalne stope investicionog kriterijuma, investiciono ulaganje je prihvatljivo, i obrnuto. Ukoliko su ove dvije stope izjednačene, investicioni projekat je marginalnog značaja. U slučajevima izbora između međusobno isključivih investicionih projekta, bira se investicioni projekat sa višom internom stopom prinosa. Kada bi priliv novca bio jednokratan, račun bi bio jednostavan. Budući da se novčani tokovi generišu tokom dužeg vremenskog perioda, u zavisnosti od karakteristika, inter-

na stopa prinosa može se računati pomoću finansijskih tablica (jedan priliv ili više jednakih priliva) ili metodom pokušaja i greške (kod nejednakih novčanih tokova). Matematički, interna stopa prinosa je korijen jednačine sadašnje vrijednosti novčanih tokova [Damodaran, 2007: 305].

Metoda interne stope prinosa ima visoku stopu primjene, a razlozi mogu biti u sljedećim činjenicama:
- relativna mjera interne stope prinosa je razumljivija i prihvatljivija od apsolutnog iznosa neto sadašnje vrijednosti;
- diskontni faktor se kod interne stope rentabilnosti izračunava, čime se eliminiše subjektivizam u proračunu diskontne stope, za razliku od metoda neto sadašnje vrijednosti gdje se diskontni faktor unaprijed zadaje;
- uvažen je i osnovni razlog proračuna rentabilnosti preduzeća u smislu da je prihvatljiv investicioni projekat (interna stopa rentabilnosti viša od prosječne cijene kapitala kojim se finansira projekat) rezultira povećanjem vrijednosti preduzeća, odnosno rastom tržišne cijene akcija;
- pogodna je i kada neto novčani tokovi godišnje nisu jednaki tokom eksploatacije investicije.

Ograničenje interne stope prinosa odnosi se na situaciju kod novih investiranje, jer je za svako novo investiranje potrebno utvrditi internu stopu. Takva situacija rezultuje višestrukom internom stopom i otežanim ocjenjivanjem dvaju ili više isključivih projekata gdje se ne može mjeriti i upoređivati efikasnost projekta. Osim toga, kao relativna vrijednost, interna stopa prinosa, ignoriše razlike u obimu. U našim uslovima, vidi se da je metoda interne stope prinosa, kao primarna i sekundarna metoda, manje prihvatljiva u odnosu na metodu neto sadašnje vrijednosti. S obzirom na slabo iskustvo naše privrede u kontekstu analize investicionog ulaganja, intuitivno se može zaključiti da se donosioci investicionih odluka vode činjenicom da je metoda neto sadašnje vrijednosti bolji izbor jer nema naročitih analitičkih nedostataka i daje sigurnije rezultate.

REZULTATI I DISKUSIJA

Izražavanje koristi investicionog projekta na gotovinskoj osnovi podrazumijeva upotrebu pokazatelJa koji se odnose na sve godine ekonomskog vijeka investicije čime se obezbjeđuje bolJi uvid u novčane tokove investicionih projekata. Metode koje svoj obračun prilikom ocjene rentabilnosti investicionog projekta baziraju na podacima zasnovanim na projekcijama diskontovanih novčanih tokova, ne samo da unose neophodan faktor dinamičnosti u proračun tako što zamjenjuju

računovodstvene pozicije projekcijama novčanih tokova, već uklJučuju i neophodan faktor vremenske vrijednosti novca. U ovom radu smo na primjerima investicionih projekata izgradnje baznih stanica „A“ i „B“ prikazali način korišćenja metode neto sadašnje vrijednost, metode indeksa profitabilnosti i metode interne stope prinosa. Sada ćemo sagledati i komparirati dobijene rezultate sva tri metoda i prodiskutovati njihove prednosti i mane.

Metodom neto sadašnje vrijednosti utvrdili smo da bi predviđena investiciona aktivnost u oba slučaja, investicionog projekata „A“ i investicionog projekata „B“ obezbjedila znatno veću zaradu od zahtijevane stope prinosa. Investicioni projekat „A“ isplativ je već u drugoj godini eksploatacije a stopom neto sadašnje vrijednosti od 85% generiše neto sadašnju vrijednost u iznosu od 63.462 KM. U slučaju investicionog projekta „B“ on postaje isplativ daje pozitivne rezultate tek poslije tri godine, međutim stopa neto sadašnje vrijednosti od 92% pokazuje neto sadašnju vrijednost u iznosu od 84.951 KM. Komparacijom dobijenih neto sadašnjih vrijednosti konstatujemo veću isplativost investicije „B“ u odnosu na investiciju „A“.

Indeks profitabilnosti je koristan alat kojim se rentabilnost investicionih projekata prezentuje kao relativna vrijednost. U slučaju naših primjera, dobijamo potvrdu metoda neto sadanje vrijednosti o većoj isplativosti projekata „B“ čiji indeks profitabilnosti pokazuje da će se inicijalna investicija vratiti 1,92 puta više nego što je samo investiciono ulaganje, dok u slučaju investicionog projekta „A“ indeks profitabilnosti iznosi 1,85. Metodu indeksa profitabilnosti možemo koristiti kao dopunsku metoda posebno u slučajevima kada imamo značajan broj kandidovanih investicionih projekata, kada je neophodno izvršiti i rangiranje istih.

Metod interne stope prinosa polazi od zavisnosti između sadašnje vrijednosti investicija i kamatne stope kao diskontnog faktora, pa tek ukoliko je ova stopa veća od minimalne prihvatlJive stope smatra se da je investiciona aktivnost ekonomski opravdana. U našim primjerima korekcije stope do ukupne neto sadašnje vrijednosti nula u slučaju projekta „A“ iznosi 0,262 , a u slučaju projekta „B“ 0,973, tako da je interna stopa prinosa slučaju projekta „A“ 48,26%, a u slučaju projekta „B“ 35,97%. Budući da se radi o dva nezavisna investiciona projekta, za oba smo pojedinačno morali da utvrđujemo interne stope, a kao rezultat, kao i kod metoda indeksa profitabilnosti, imamo pokazatelj u obliku relativne vrijednosti.

Iz naprijed navedenog, možemo konstatovati da je ocjena opravdanosti realizacije investicionih projekata u svrhu donošenja investicionih odluka je veoma složen

postupak koji treba da obuhvati sve relevantne faktore. Izražavanje koristi investicionog projekta na obračunskoj (akrualnoj) osnovi pruža nam okviran uvid u opravdanost projekta jer se prilikom analize ne posmatra cjelokupni ekonomski vijek projekta, već samo jedna reprezentativna godina. Budući da nas interesuje opravdanosti realizacije investicionih projekata u cjelini, potrebno je analizirati projekcije novčanih tokova tokom svih godina njegovog ekonomskog vijeka. U tu svrhu testirali smo metod neto sadašnje vrijednosti, metod profitabilnosti i metod interne stope prinosa. Na osnovu datih primjera možemo potvrditi prednost metoda neto sadašnje vrijednosti, prije svega iz razloga što ovaj metod uzima u obzir sve novčane tokove, obuhvata cjelokupan vijek trajanja projekta respektujući vremensku vrijednost novca. Na ovaj način, uzimajući u obzir rizik budućih novčanih tokova obezbjeđuje se uporedivost novčanih tokova u različitim vremenskim tačkama. Osim toga, metoda neto sadašnje vrijednosti ne generiše bitne analitičke nedostatke, već naprotiv pokriva čitav niz inputa neophodnih za ovakvu vrstu analize, daje siguran, nedvosmislen, odgovor na pitanje da li će projekat povećati vrijednost preduzeća i u kom vremenskom periodu, a sam pokazatelj isplativosti je iskazan u apsolutnom obliku.

ZAKLJUČAK

Imajući u vidu značaj investicione aktivnosti možemo zaključiti da je u svrhu donošenja dobre investicione odluke neophodno realno sagledati cjelokupan proces investiranja i ocijeniti opravdanost realizacije investicionog projekta. U tom smislu identifikujemo, mjerimo i kvantifikujemo ukupne efekte koje donosi realizacija određene investicije. Ocjena investicionih ulaganja koja za rezultat imaju ekonomske i neekonomske efekte, vrši se s aspekta preduzeća, ali i s aspekta šire društvene zajednice. Preduzeće je fokusirano na direktne ekonomske efekte koji se relativno egzaktno mogu mjeriti, dok je u slučaju države ili lokalne uprave interes usmjeren na širi društveni značaj efekata investicije. Budžetiranje kapitala u svrhu donošenja investicione odluke danas je opšteprihvaćen koncept u razvijenim privredama. Nema sumnje da postoje mnoga neslaganja u vezi sa izborom metoda ocjene rentabilnosti investicionih ulaganja, a onda i izbora kriterija u okviru određene metode. Međutim, sasvim je izvjesno da bogato iskustvo razvijenih zemalja nedvojbeno ukazuje na potrebu budžetiranja kapitala, upravljanja investicionim projektima, s posebnim akcentom na korišćenje diskontovanih metoda ocjene rentabilnosti investicionog ulaganja i respektovanja kako ekonomskih tako i neekonomskih efekata. Nemjerljive su koristi koje primjena budžetiranja kapitala donosi ukupnom rastu i razvoju preduzeća, u smislu smanjivanja neizvjesnosti prilikom donošenja investicionih od-

luka, lakšem rangiranju investicionih projekata, egzaktnom mjerenju očekivane koristi, transparentnosti kriterija investicione aktivnosti, privlačenju investitora i naposljetku stvaranju dodatne vrijednosti i većem stepenu realizacije strateških ciljeva preduzeća.

Ovim radom smo ukazali na činjenicu da je budžetiranje kapitala presudno u procesu donošenja investicione odluke i na taj način uticali kao podstrek preduzećima da se ozbiljnije pozabave izborom metode ocjene rentabilnosti investicionih projekata koji će zasigurno rezultirati dodatnom vrijednošću za preduzeće.

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EXPLANATION OF THE BENEFIT OF THE INVESTMENT PROJECT ON THE CASH BASIS

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Abstract: *Decisions about the choice of investment projects can significantly affect the destiny of the company, its competitive position in the market, market participation, the direction of further technological development, and even the survival of the company. The aim of this paper is, in the conditions of the current economic reality, to point out the significance of the choice of methods of expressing the benefit of an investment project. In this sense, we have explained in detail all currently applicable methods for assessing the viability of investment projects on a cash basis, comparing the good and bad sides of all the methods presented. In this connection, we especially pointed out the importance of the time value of money. The decision to apply the capital budgeting process, certainly, is the decision of the company itself. However, the outcome of investment activity is borne by a wider circle of consumers, which should be a sufficient reason to encourage education and the application of current methods in this area. If you want to realistically look at the investment process and evaluate the justification of an investment project, it is necessary to identify and analyse the effects of exploitation of a particular investment. In order to ensure the realization of the company's basic strategic goals and thus ensure its growth and development, it is necessary to make decisions in which the company will focus its investment activities on this investment projects whose effects will ensure the highest return on investment. This work deals with the complex issues of making adequate investment decisions using a method for assessing the viability of investment projects on a cash basis. Bearing in mind the significance of investment activity, we can conclude that for the purpose of making a good investment decision, it is necessary to realistically look at the entire investment process and assess the justification of the implementation of the investment project. In this sense, we identify, measure and quantify the overall effects of the realization of a particular investment. Capital budgeting for the purpose of making an investment decision today is a generally accepted concept in developed economies. There is no doubt that there are many disagreements regarding the choice of the methods of assessing the viability of investment investments, and then the selection of criteria within a certain method. However, it is quite certain that the rich experience of developed countries undoubtedly points to the need for capital budgeting, invest-*

ment project management, with particular emphasis on the use of discounted methods for assessing the viability of investment investment and respecting both economic and non-economic effects. Implicit benefits that the application of capital budgeting brings to the overall growth and development of the company, in terms of reducing uncertainty in making investment decisions, easier ranking of investment projects, exact measurement of expected benefits, transparency of investment activity criteria, attracting investors and ultimately creating additional value and greater degree of realization of strategic company goals.

With this work, we pointed out the fact that capital budgeting is crucial in the process of making an investment decision and in that way has influenced enterprises to seriously deal with the choice of the method of estimating the profitability of investment projects that will surely result in additional value for the company.

Keywords: *Corporate Finance, Investment, Productivity, Growth, Capital Budgeting.*

Jel Classification: *O16, E22, 047, O4, G31*

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KRATKO SAOPŠTENJE / SHORT REPORT

KORPORATIVNO UPRAVLJANJE I ORGANIZACIJSKA KULTURA

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Sažetak: *Međuodnos korporativnog upravljanja i organizacijske kultue je oduvijek postojao. Korporativno upravljanje je prisutno u velikim organizacijama, koje u BiH nazivamo dioničkim društvima. Proces rada organizacije, isplate dividende, obavljanja day – to – day operacija prati se od strane osoba koje su zadužene za korporativno upravljanje. Sa druge strane, unutar svake organizacije, pa tako i korporacije, posti određena organizacijska kultura, koja je specifična, te nju suštinski poznaju samo uposlenici određene kompanije. Organizacijska kultura ima svoje elemente, funkcije kao i tipove, a kroz rad se pokušalo definirati koje funkcije, elementi i koji tipovi organizacijske kulture su zapravo najkarakterističniji u korporacijama koje se nalaze u Bosni i Hercegovini. Istraživački proces, koji je uključivao anketiranje 5 dioničkih društava u Bosni i Hercegovini, i koji se zahvaljujući poštivanju metodološkog okvira, gdje je prva metoda bila hipotetičko deduktivna, i alata deskriptivne statistike, je dao adekvatne rezultate. Ti rezultati predstavljeni su u dijelu rada koji se odnosi na empirijsko istraživanje, a isti je doveden u vezu sa prethodno postavljenim hipotezama i ciljevima istraživanja.*

Ključne riječi: *korporativno upravljanje, organizacijske kultura.*

JEL No: *G34, M14.*

UVOD

Korporativno upravljanje je karakteristično za velike organizacije, odnosno korporacije. Kako bi smo u duhu našeg jezike, običaja i kulture shvatili adekvatno korporativno upravljanje, koje je prvobitno karakteristično za američki sistem i američku ekonomiju, korporativno upravljanje se shvata kao upravljanje u dioničkim društvima. Dionička društva predstavljaju oblik organizacije privrednog društva koja emitiraju dionice na berzi. Ova društva tako su obavezi su da javno publikuju svoje finansijske izvještaje, kao što su: bilans stanja, bilans usp-

jeha, izvještaji o gotovinskim tokovima i sl. Kada je u pitanju objavljivanje finansijskih izvješataja u BiH, korporacije to mogu uraditi na dva finansijska tržišta: Sarajevskoj i Banjalučkoj berzi. Svaka korporacija ima svoju specifičnu organizacijsku kulturu. Organizacijska kultura predstavlja skup neformalnih (nekada i formalnih) pravila, stavova, običaja i vrijednosti, koje prožimaju korporaciju i uveliko utječu na njenu orgaizacijsku uspješnost. Organizacijsku kulturu čine ljudi, uposlenici unutar određene organizacije, pa je tako potrebno svakog novog uposlenika unutar organizacije upoznati sa pravilima organizacijske kulture. Obzirom da je korporacija veliko preduzeće, može se govorit o organizacijskoj kulturi i na nivou određenog sektora, na nivou određene organizacijske funkcije ili organizacijske jedinice. Tako se organizacijska kultura može spustiti i na niže nivoe unutar korporacije, no ona može biti i korporacijska organizacijska kultura. Predmet istraživanja u radu je kompleksna pojava utjecaja organizacijske kulture na uspjeh rada korporacije. Poslovni uspjeh može da se mjeri kroz finansijski uspjeh, ali i kroz korektne i dobre međuljudske odnose u organizaciji. Pored navedenog, u radu će se ispitati koji element i koja funkcija organizacijske kulture su najvažniji za korporaciju. Postoji više različitih oblika organizacijske kulture, a kroz rad će se istražiti i koji vrsta organizacijske kulture je najpoželjnija i najvažnija u organizaciji. Glavna hipoteza u ovom radu glasi: "Organizacijska kultura korporacije dominantno utječe na poslovni uspjeh organizacije." U ovom slučaju nezavisna varijabla je organizacijska kultura korporacije, dok je zavisna varijabla poslovni uspjeh organizacije. U radu su postavljenje četiri pomoćne hipoteze, a to su:

PH1: "Jezik i komunikacija najvažniji je element korporativne organizacijske kulture."
PH2: "Postizanje odanosti zaposlenih organizaciji najvažnija je funkcija korporativne organizacijske kulture"
PH3. „Za uspjeh korporativnog upravljanja potrebna je jaka i dominatna organizacijska kultura"
PH4: „Za uspjeh korporativnog upravljanja potrebna je participativna kultura."

PRETHODNA ISTRAŽIVANJA

Korporativno upravljanje

Kororativno upravljanje predstavlja oblik upravljanja koji je karakterstičan za korporacije, odnosno za dionička društva. Jednu od izuzetno dobrih definicija korporativnog upravljanja, koja se odnosi i na porijeklo ove sintagme, daje Đorđević M. (2004:191): „Korporativno upravljanje, kao skup mehanizama kojima se jedna korporacija vodi, raste i razvija na tržištu, od fundamentalnog je značaja za razvijene zemlje svijeta (Sjedinjene Američke Države - SAD, Ujedinjeno Kraljevstvo - UK, Njemačka, Kanada, Francuska i Japan)." Korporativno upravljanje tema-

tika je koja zauzima jako važno mjesto u raspravama ekonomista. „Korporativno upravljanje predstavlja javni i privatni institucionalni okvir, koji uključuje pravnu infrastrukturu, zakone i poslovnu praksu, a koji su kreirani sa svrhom uređivanja efikasnog odnosa između menadžera, sa jedne, i onih koji investiraju u kompaniju sa druge strane (vlasnici)." (Kalezić Z., 2008:33). Kod korporacija je jako zanimljiva struktura vlasništva, koja je različita u odnosu na sve ostale oblike organizovanja privrednih društava. „Kod nižih organizacionih oblika privrednih društava vlasnici kapitala najčešće čine i njihovu upravljačko-rukovodnu strukturu. Korporacija pak predstavlja takav organizacioni oblik privrednih društava u kojem postoji veliki broj vlasnika kapitala, čije sposobnosti za upravljanje takvim entitetom nisu dovoljne, tako da su prinuđeni da angažuju profesionalno kompetentne stručnjake izvan privrednog društva (menadžere), na koja prenose pravo upravljanja i rukovođenja." (Đorđević S., 2012: 53). Dakle, sasvim je jasno da u korporacijama jako je veliki broj učesnika koji imaju određeni interes, pa se tako postavlja pitanje kako te interese zadovoljiti." Interni mehanizmi korporativnog upravljanja pomoću kojih dionici osiguravaju svoje interese su: odbori i komisije, sistem nagrađivanja, koncentracija i struktura vlasništva, odnosi s utjecajno-interesnim skupinama te korporativno izvještavanje." (Radman Peša A., Lukavac M., Prohaska Z., 2012:228). „Odbori su organizacijski instrumenti putem kojih dioničari mogu utjecati na odluke menadžmenta kako bi osigurali da se korporacijom upravlja u njihovom interesu. U modernoj korporaciji mogu se razlikovati dva načina organizacije odbora: uspostava jedinstvenog odbora direktora ili upravnog odbora i uspostava dva odbora; nadzornog odbora i uprave." (Tipurić D., 2008:67)

Koliko god danas korporativno upravljanje bilo interesantno i koliko god se o ovom terminu vodila konstanta debata, korporativno upravljanje nije star pojam. „Korporativno upravljanje se razvijalo kao proces poslje velikih kriza i propadanja društvenih sistema. Na primjer slom berze koji se dogodio u SAD 1929. godine, podstakao je donošenje niza zakona koji su se odnosili na hartije od vrijednosti. Termin korporativno upravljanje u okvirima u kojima se danas primjenjuje pojavljuje se u stručnoj literaturi tek 80- tih godina prošlog vijeka. Eugene Fama i Michael Jensen su 1980. godine problem korporativnog upravljanja su predstavili kroz odnos direktor-agent, a firmu kao niz ugovora. U istom periodu, COSO (Committee of Sponsoring Organisation of TradewayCommisioni) je razvio okvir za unutrašnju kontrolu i uputstva za objavljivanje izvještaja o internoj kontroli." (Eisenhart K., 1989:57). Postoji više različitih tipova korporativnog upravljanja o kojima se može govoriti. „Postoje dva sistema (modela) korporativnog upravljanja: a) anglosaksonski (tzv. jednodomni sistem, engl. onetier system) i b) njemački (tzv. dvodomni sistem, engl. two-tier system) sistem. Navedena

podjela je izvršena na osnovu analize rješenja kompanijskog prava u pogledu organizacije strukture akcionarskih društava, na osnovu vlasničke strukture u akcionarskim društvima, načina funkcionisanja finansijskog tržišta, prakse pravne zaštite akcionara, dostupnosti informacija zainteresovanim licima kao i na osnovu načina vršenja kontrole nad radom menadžmenta." (Jocović M., 2011:64).

Organizacijska kultura

Organizacijska kultura predstavlja poseban oblik kulture koja uključuje određene običaje, stavove, vrijednosti, tradicije i rituale. "Organizacijska kultura obuhvaća sistem ideja i koncepata, običaja, tradicija, procedura i navika za djelovanje u posebnoj makrokulturi. Organizacijska kultura je niz vrijednosti, normi i uvjerenja." (Žugaj M., Bojanić – Glavica B., Barćić R., 2004:18). Postoji jako puno različitih definicija organizacijske kulture, a ona se izučava posebno od 80 – tih godina prošlog stoljeća. „Organizaciona kultura definisana je kao duboko usađene (često podsvjesne) vrijednosti i ubjeđenja koje ljudi dijele u organizaciji. Organizaciona kultura se manifestuje u tipičnim karakteristikama organizacije" (E.C. Martins, F. Terblanche, 2003:65).

Za organizacijsku kulturu nemoguće je reći da je to fiksna pojava, koja se apsolutno nikada ne mijenja. „Iako organizacijska kultura predstavlja postojani sistem vrijednosti, odnosa, shvaćanja, uvjerenja, etike, životnih stilova te daje identitet, osobnost i karakter organizaciji ona je trajni proces koji se mijenja i prati razvoj i promjene u organizaciji" (Buljan Barbača D., Bačić L., Milun T., 2014:288).

„Osnovne četiri funkcije organizacijske kulture su:

- davanje članovima organizacije osjećaj identiteta odnosno pripadnosti preduzeću,
- postizanje odanosti preduzeću od strane zaposlenih,
- stvaranje stabilnosti u kompaniji kao socijalnom sistemu,
- strukturiranje zaposlenih dajući im tako na znanje u kakvoj se okolini nalaze" (Žugaj M., 2004:15).

Organizacijska kultura, kao kompleksna pojava, može da se razloži na svoje sastavne dijelove, odnosno na elemente. Svaki od elemenata organizacijske kulture podjednako je važan, no činjenica je da je u nekim organizacijama neki elemenet organizacijske kulture više izražen u odnosu na neke druge elemente. U procesu istraživanja pokazati će se koji element organizacijske kulture je najizraženiji u korporacijama, te samim time, najviše doprinosi procesu korporativnog upravljanja, a u nastavku teksta bit će navedeni neki od elemenata organizacijske kulture.

Tabela 1. Vrste elemenata organizacijske kulture

Element	Opis
Vrijednosti	Vežu se uz prioritete koji imaju važno značenje za razvoj i opstanak
Norme	Vežu se uz postupak kojim se želi nešto postići (otkrivaju ponašanje zaposlenika)
Stavovi i uvjerenja	Uključuju temeljna načela i standarde ponašanja organizacije
Običaji i rituali	Osnaživanje identifikacije radnika s organizacijom
Jezik i komunikacija	Jezik utječe na socijalni status radnika u organizaciji, dok komunikacija služi za izražavanje vlastitog identiteta

Izvor: Belak, S., Ušljebrka, I. (2014). Organizacijska kultura kao čimbenik uspješne provedbe organizacijske promjene. Oecenomica Jadertina. Vol 4, No. 2. Zadar, str. 88.

Ukoliko organizacijska kultura se razlikuje od preduzeća do preduzeća, može se zaključiti da postoji više različitih tipova organizacijske kulture. Sa aspekta veličine preduzeća zasigurno se može reći da postoji organizacijska kultura koja je svojstvena za mikro, mala, srednja i velika preduzeća, odnosno postoji kultura koja je svojstvena za korporacije. U tom kontekstu će se u istraživačkom dijelu govoriti upravo o karakteristikama organizacijske – korporacijske kulture, a najčešći oblici organizacijske kulture su:

- „dominantna kultura i supkultura;
- jaka i slaba kultura;
- jasna i nejasna kultura;
- izvrsna i užasna kultura;
- postojana i prilagodljiva kultura;
- participativna i neparticipativna kultura.

Dominantna kultura je ona o kojoj jednako misli većina članova organizacije. Ako je dominantna kultura opsežna i ako je podržavaju članovi organizacije, onda kažemo da organizacija ima jaku kulturu. Za jaku kulturu valja reći da je to sistem neformalnih pravila koja ističu kako se ljudi moraju ponašati, ali i da se moraju osjećati bolje zbog onoga što rade. Suprotnost je jakoj kulturi slaba kultura. Slabu kulturu ne podržavaju članovi organizacije, malo je zajedništva o specifičnim vrijednostima“ (Brčić R., 2003:1049)

Svaki segment organizacijske kulture podjenako je važan, ali se organizacijska kultura može posmatrati kao jedna cjelina, ali se i njeni sastavni dijelovi mogu proučavati i posebno posmatrati kao zasebne cjeline. „Osnovne vrijednosti organizacije u snažnoj kulturi se čvrsto drže i dijele široko. Drugim riječima, kada članovi organizacije prihvataju zajedničke vrijednosti, postaju sve više posvećeni njima“ (Irfan S., Ahmad Marzuki N., 2018:142).

REZULTATI ISTRAŽIVANJA

Opis istraživanja

Istraživanje je izvršeno nad pet korporacija koje su smještene u Federaciji Bosne i Hercegovine. Sva preduzeća koja su anketirana su korporacije – dionička društva, te kotiraju na sarajevskoj berzi (www.sase.ba). Anketirana preduzeća su:

- HT Eronet Mostar;
- BH Telecom Mostar;
- Central osiguranje d.d.;
- Elektrodistribucija Mostar;
- UniCredit banka Mostar.

Anketni upitnik su popunjavali voditelji poslovnice, uposlenici koji imaju veći nivo odgovornosti u kompaniji.

METODOLOGIJA ISTRAŽIVANJA

Istraživanje je rađeno poštujući metodološki okvir, gdje je prva korištena metoda hipotetičko deduktivna. U radu su korištene metode analize i sinteze, metode indukcije i dedukcije, kao i statistička i komparativna metoda.

Izgled anketnog upitnika

1. Da li je Vaše preduzeće organizovano kao dioničko društvo?
   a) DA
   b) NE

(Ukoliko je Vaš odgovor NE, završili ste sa anketnim upitnikom)

2. Da li smatrate da organizacijska kultura utječe na poslovni uspjeh korporacije?
   a) DA
   b) NE
3. Ocjenom 1 do 5 ocjenite važnost funkcija organizacijske kulture u korporacijama (1 – najmanje važno, 5 – najvažnije):

Funkcije organizacijske kulture	1	2	3	4	5
Davanje članovima organizacije osjećaj identiteta odnosno pripadnosti poduzeću					
Postizanje odanosti poduzeću od strane zaposlenih					
Stvaranje stabilnosti u kompaniji kao socijalnom sistemu					
Strukturiranje zaposlenih dajući im tako na znanje u kakvoj se okolini nalaze.					

4. Ocjenom 1 do 5 ocjenite važnost elemenata organizacijske kulture u korporacijama (1 – najmanje važno, 5 – najvažnije):

Elementi organizacijske kulture	**1**	**2**	**3**	**4**	**5**
Vrijednosti					
Norme					
Stavovi i uvjerenja					
Običaji i rituali					
Jezik i komunikacija					

5. Zaokružite koji tip organizacijske kulture je prisutan u korporaciji u kojoj se uposleni?

Dominantna kultura	Subkultura
Jaka kultura	Slaba kultura
Jasna kultura	Nejasna kultura
Izvrsna kultura	Užasna kultura
Postojana kultura	Prilagodljiva kultura
Participativna kultura	Neparticipativna kultura

REZULTATI EMPIRIJSKOG ISTRAŽIVANJA

U ovom dijelu rada biti će prikazani rezultati empirijskog istraživanja kada su u pitanju dvije ključne varijable, a to su uspjeh korporacije i organizacijska kultura.

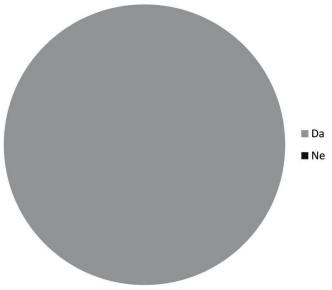
Pitanje 1. Da li je Vaše preduzeće organizovano kao dioničko društvo?

a) DA
b) NE

Tabela 2. Oblik orgaizacije društva

Odgovori	Rezultati	%
DA	5	100
NE	0	0
Ukupno	5	100

Izvor: Autor rada



Grafikon 1. Oblik orgaizacije društva

Izvor: Autor rada

Od ukupnog broja analiziranih preduzeća 100% njih predstavljaju dionička društva.

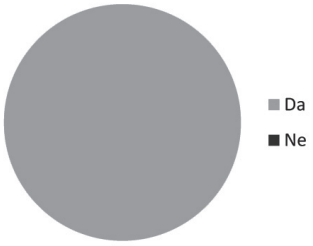
Pitanje 2. Da li smatrate da organizacijska kultura utječe na poslovni uspjeh korporacije?

a) DA
b) NE

Tabela 3. Utjecaj organizacijske kulture na poslovni uspjeh korporacije

Odgovori	Rezultati	%
DA	5	100
NE	0	0
Ukupno	5	100

Izvor: Autor rada



Grafikon 2. Utjecaj organizacijske kulture na poslovni uspjeh korporacije

Izvor: Autor rada

Sva preduzeća, koja su predmet analize, su korporacije. Dakle, istraživanje na relevantnom uzorku pokazuje kako je stav menadžera da organizacijska kultura dominantno utječe na poslovni uspjeh korporacije. Ovakva konstatacija automatski znači i da je glavna hipoteza u radu potvrđena, no i to da je potrebno poznavati korporacijsku organizacijsku kulturu, da je potrebno voditi brigu o istoj, što direktno implicira potrebu za brigom za uposlenicima i sl. U nastavku istraživačkog dijela će se precizirati funkcije, elementi i tipovi organizacijske kulture u korporacijama u Bosni i Hercegovini.

Pitanje 3. Ocjenom 1 do 5 ocjenite važnost funkcija organizacijske kulture u korporacijama (1 – najmanje važno, 5 – najvažnije):

Funkcije organizacijske kulture	1	2	3	4	5
Davanje članovima organizacije osjećaj identiteta odnosno pripadnosti poduzeću					
Postizanje odanosti poduzeću od strane zaposlenih					
Stvaranje stabilnosti u kompaniji kao socijalnom sistemu					
Strukturiranje zaposlenih dajući im tako na znanje u kakvoj se okolini nalaze					

Tabela 4. Funkcije organizacijske kulture u korporaciji

Funkcije/odgovori	1	2	3	4	5	Σ
Davanje članovima organizacije osjećaj identiteta odnosno pripadnosti poduzeću	0 (0%)	2 (40%)	3 (60%)	0 (0%)	0 (0%)	5 (100%)
Postizanje odanosti poduzeću od strane zaposlenih	0 (0%)	0 (0%)	1 (20%)	1 (20%)	3 (60%)	5 (100%)
Stvaranje stabilnosti u kompaniji kao socijalnom sistemu	1 (20%)	0 (0%)	1 (20%)	2 (40%)	0 (0%)	5 (100%)
Strukturiranje zaposlenih dajući im tako na znanje u kakvoj se okolini nalaze.	0 (0%)	2 (40%)	1 (20%)	1 (20%)	1 (20%)	5 (100%)

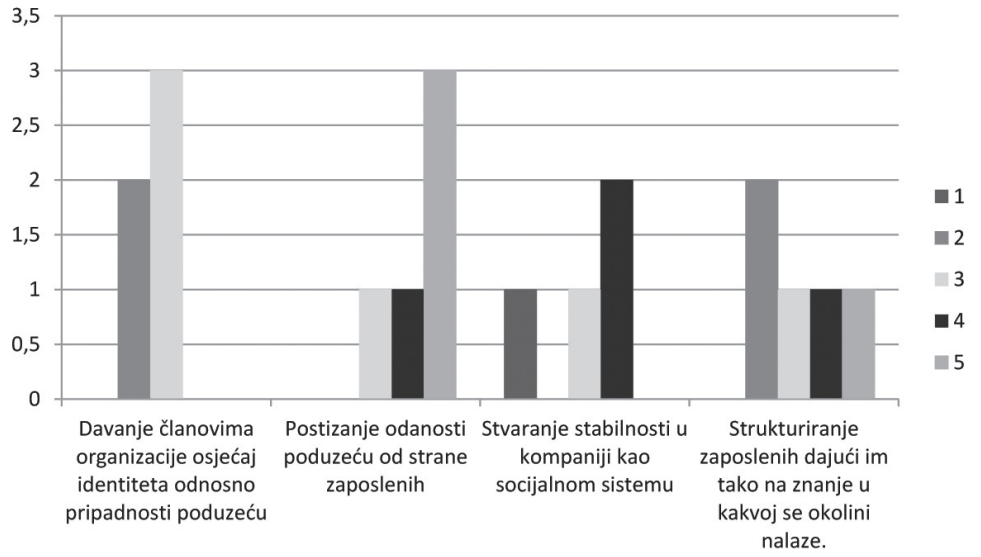
Izvor: Autor rada

Tabela 5. Funkcije organizacijske kulture u korporaciji – Prosječna ocjena

Funkcije/odgovori	**Prosječna ocjena**
Davanje članovima organizacije osjećaj identiteta odnosno pripadnosti poduzeću	2,6
Postizanje odanosti poduzeću od strane zaposlenih	4,4
Stvaranje stabilnosti u kompaniji kao socijalnom sustavu	2,4
Strukturiranje zaposlenih dajući im tako na znanje u kakvoj se okolini nalaze	3,2

Izvor: Autor rada

Grafikon 3. Funkcije organizacijske kulture u korporaciji



Izvor: Autor rada

Na bazi prethodnog razmatranja mogu se vidjeti četiri ključne funkcije organizacijske kulture u korporaciji. To su: davanje članovima organizacije osjećaj identiteta odnosno pripadnosti poduzeću, postizanje odanosti poduzeću od strane zaposlenih, stvaranje stabilnosti u kompaniji kao socijalnom sistemu i strukturiranje zaposlenih dajući im tako na znanje u kakvoj se okolini nalaze. Sve ove funkcije veoma su značajne za korporacijski uspjeh, no pitanje je koja je od navedenih najznačajnija u toku svakodvenog poslovanja korporacije i u toku obavljanja day – to – day operacija. Istraživanje nad 5 korporacija u Bosni i Hercegovini pokazuje da je najznačajnija funkcija organizacijske kulture u korporaciji postizanje odanosti poduzeću od strane zaposlenih, sa prosječnom ocjenom 4,4. Ovo je veoma visoka ocjena, te pokazuje težnju uprave korporacije ka tome da se svi članovi organizacije osjećaju dobro, te da ne razmišljaju o promjeni posla. Odanost je izuzetno važna, jer je pokazatelj slabe fluktuacije uposlenika. Odlazak starih uposlenika i dolazak novih uslovio bi i nastanak neke nove organizacijske kulture, što svakako nije u cilju upravi, jer nova organizacijska kultura bi podrazumjevala i proces prilagođavanja, koji može dovesti do negativnih trendova ponašanja uposlenika, što ujedno može dovesti do negativnih poslovnih rezultata. Druga funkcija po važnosti, na bazi istraživanja, je strukturiranje zaposlenih dajući im tako na znanje u kakvoj se okolini nalaze. Nakon toga slijedi davanje članovima organizacije osjećaj identiteta odnosno pripadnosti poduzeću, dok je, na bazi istraživanja, najmanje značajna funkcija organizacijske kulture u korporaciji je stvaranje stabilnosti u kompaniji kao socijalnom sistemu. Analizirajući sve prethodno rečeno, može se zaključiti da je pomoćna hipoteza 2 potvrđena.

Pitanje 4. Ocjenom 1 do 5 ocjenite važnost elemenata organizacijske kulture u korporacijama (1 – najmanje važno, 5 – najvažnije):

Elementi organizacijske kulture	**1**	**2**	**3**	**4**	**5**
Vrijednosti					
Norme					
Stavovi i uvjerenja					
Običaji i rituali					
Jezik i komunikacija					

Tabela 6. Elementi organizacijske kulture u korporaciji

Elementi/odgovori	**1**	**2**	**3**	**4**	**5**	**Σ**
Vrijednosti	0 (0%)	0 (0%)	1 (20%)	2 (40%)	2 (40%)	5 (100%)
Norme	0 (0%)	1 (20%)	2 (40%)	1 (20%)	1 (20%)	5 (100%)
Stavovi i uvjerenja	0 (0%)	1 (20%)	2 (40%)	1 (20%)	1 (20%)	5 (100%)

Običaji i rituali	1 (20%)	0 (0%)	3 (60%)	1 (20%)	0 (0%)	5 (100%)
Jezik i komunikacija	0 (0%)	0 (40%)	0 (0%)	0 (0%)	5 (100%)	5 (100%)

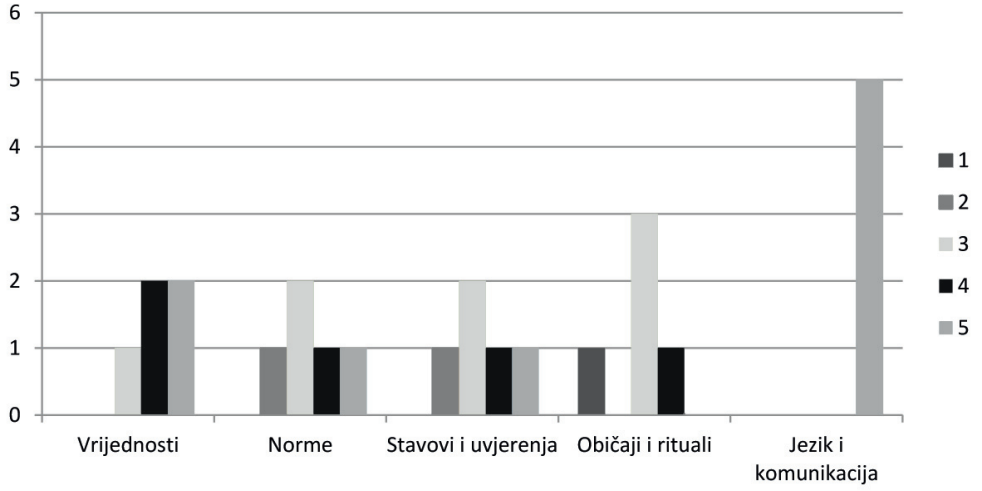
Izvor: Autor rada

Tabela 7. Elementi organizacijske kulture u korporaciji – Prosječna ocjena

Funkcije/odgovori	Prosječna ocjena
Vrijednosti	4,2
Norme	3,4
Stavovi i uvjerenja	3,4
Običaji i rituali	2,8
Jezik i komunikacija	5,0

Izvor: Autor rada

Grafikon 4. Elementi organizacijske kulture u korporaciji



Izvor: Autor rada

Istraživanje pokazuje da je, kada su u pitanju elementi organizacijske kulture, najvažniji su upravo jezik i komunikacija. Prosječna ocjena za ovaj element iznosi 5,00, iz čega proizilaze dvije važne činjenica. Prva je da svih pet analiziranih korporacija zapravo smatra da su jezik i komunikacija najvažniji element organizacijske kulture, a druga, da je na ovaj način pomoćna hipoteza 1 potvrđena. Dalje slijede vrijednosti, kao izuzetno važan dio organizacijske kulture sa prosječnom ocjenom 4,2. Nakon toga slijede norme i stavovi i uvjerenja sa prosječnom ocje-

nom 3,4, dok namanje važno za bh korporacije jesu običaji i rituali (prosječna ocjena 2,4).

Pitanje 5. Zaokružite koji tip organizacijske kulture je prisutan u korporaciji u kojoj se uposleni?

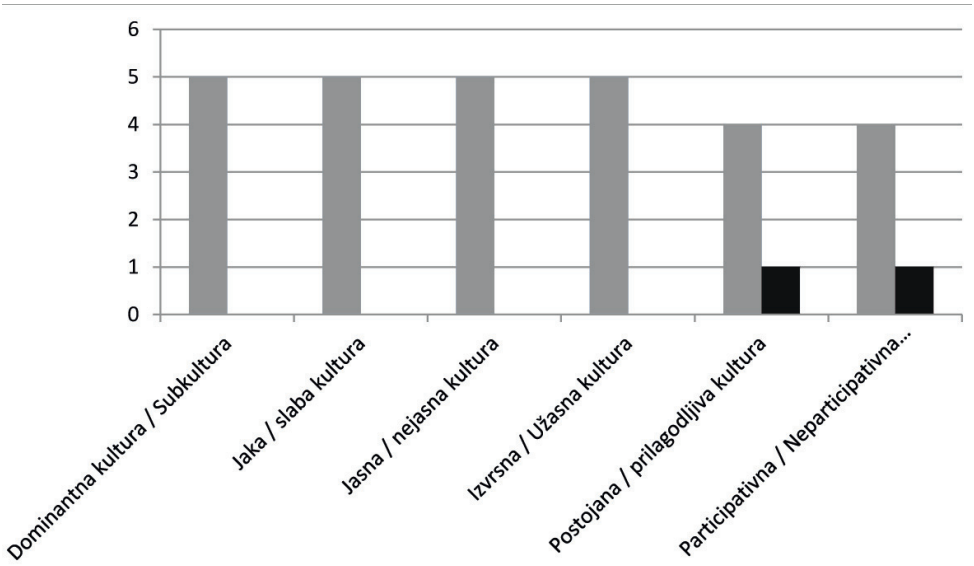
Dominantna kultura	Subkultura
Jaka kultura	Slaba kultura
Jasna kultura	Nejasna kultura
Izvrsna kultura	Užasna kultura
Postojana kultura	Prilagodljiva kultura
Participativna kultura	Neparticipativna kultura

Tabela 8. Tipovi organizacijske kulture u korporaciji

Dominantna kultura	5 (100%)	0 (0%)	Subkultura
Jaka kultura	5 (100%)	0 (0%)	Slaba kultura
Jasna kultura	5 (100%)	0 (0%)	Nejasna kultura
Izvrsna kultura	5 (100%)	0 (0%)	Užasna kultura
Postojana kultura	4 (80%)	1 (20%)	Prilagodljiva kultura
Participativna kultura	4 (80%)	1 (20%)	Neparticipativna kultura

Izvor: Autor rada

Grafikon 5. Tipovi organizacijske kulture u korporaciji



Izvor: Autor rada

Kada su korporacije u pitanju, može se zaključiti da se u korporacijama u BiH najviše preferiraju sljedeći tipovi organizacijske kulture: dominantna kultura, jaka, jasna, izvrsna kultura. Kada je u pitanju prilagodljivost kulture, prihvatljivija je postojana kultura, no u određenim korporacijama se primjenjuje i prilagodljiva kultura. Sa druge strane, kada je u pitanju uključenost uposlenika u samo formiranje i oblikovanje organizacijske kulture, većinski se primjenjuje participativna kultura, koja podrazumjeva involviranost uposlenika u proces oblikovanja organizacijske kulture, no u određenim organizacijama se primjenuje u neparticipativna organizacijska kultura, i to veoma uspješno.

ZAKLJUČAK

Rad je dao osvrt, teorijski i empirijski, na organizacijsku kulturu, te utjecaj organizacijske kulture na proces korporativnog upravljanja. Prethodno pomenuti proces korporativnog upravljanja je kontinuiran proces, koji se ne može završiti, jer kada bi u jednom preduzeću postojao taster koji pali i gasi korporativno upravljanja, u momentu kada bi se kliknula opcija off, definitvno bi se ugasilo i preduzeće. Dakle, riječ je o jednom konstantnom procesu, koji održava preduzeće u životu. Bosna i Hercegovina je jako mala država, sa bogatim resursima, no ipak, sa jako malim brojem kompanija koje se mogu definirati kao korporacije, odnosno koje su organizovane kao dionička društva. Dionička društva u Bosni i Hercegovini kotiraju na nekoj od dvije berze, sarajevskoj ili banjalučkoj berzi. Organizacijska kultura sastavni je dio svake organizacije, i bez organizacijske kulture nema ni organizacije. Organizacijska kultura ima svoje elemente, funkcije kao i tipove, a kroz rad se pokušalo definirati koje funkcije, elementi i koji tipovi organizacijske kulture su zapravo najkarakterističniji u korporacijama koje se nalaze u Bosni i Hercegovini. Istraživački proces, koji je uključivao anketiranje 5 dioničkih društava u Bosni i Hercegovini, i koji se zahvaljujući poštivanju metodološkog okvira, gdje je prva metoda bila hipotetičko deduktivna, i alata deskriptivne statistike, je dao adekvatne rezultate. Ti rezultati predstavljeni su u dijelu rada koji se odnosi na empirijsko istraživanje, a isti je doveden u vezu sa prethodno postavljenim hipotezama i ciljevima istraživanja. Glavna hipoteza u ovom radu glasi: "Organizacijska kultura korporacije dominantno utječe na poslovni uspjeh organizacije." Ova hipoteza je potvrđena, a svi ispitanici smatraju da je upravo organizacijska kultura, koja uključuje stavove, uvjerenja, vrijednosti, običaje i sl., ono što najviše doprinosi samom organizacijskom uspjehu. Organizacijska kultura podrazumjeva i način organizovanja i stil rukovođenja i način donošenja odluka, ali i stil oblačenja u organizaciji, komunikaciju i jezik i sl. Dakle, zaključuje se da je organizacijska kultura jedan sveobuhvatan pojam koji

uključuje čitav niz stavki koje se tiču interne organizacije unutar korporacije, a sve te stavke koje nazivamo organizacijskom kulturom od presudnog su značaja za korporacijski uspjeh. Prva pomoćna hipoteza je glasila: "Jezik i komunikacija najvažniji su element korporativne organizacijske kulture." Ova je hipoteza potvrđena. Istraživanje pokazuje da su upravo jezik i komunikacija ono što najviše doprinosi razvoju korporacija u odnosu na sve ostale elemente organizacijske kulture, kao što su stavovi i uvjerenja, vrijednosti, običaji. "Postizanje odanosti zaposlenih organizaciji najvažnija je funkcija korporativne organizacijske kulture" druga je pomoćna hipoteza. Ova hipoteza je također potvrđena, a zahvaljujući ovom se shavata da i unutar velikih preduzeće, kakve su korporacija, najvažnije je da se uposlenici osjećaju dobro i da prihvataju korporaciju kao mjesto na kojem će dati sve od sebe i gdje se njihov trud cijeni, odnosno mjesto kome su odani. Pozitvna je stvar da i menadžeri posmatraju ovaj segment organizacijske kulutre na takav način. U nastavku postavljena je pomoćna hipoteza broj 3., a koja je glasila „Za uspjeh korporativnog upravljanja potrebna je jaka i dominatna organizacijska kultura". Ova je hipoteza potvrđena, a to se može vidjeti u dijelu koji se odnosi na rezultate empirijskog istraživanja. Ova se hipoteza može povezati i sa onom narednom, koja glasi: „Za uspjeh korporativnog upravljanja potrebna je participativna kultura." Cilj ovih hipoteza bio je ustanoviti kakav tip organizacijske kulture je prisutan u korporacijama u Bosni i Hercegovini, pa se tako pokazalo, na bazi sprovedenog istraživanja, da su obe hipoteze potvrđene, te da organizacijska kultura u korporacijama u Bosni i Hercegovini je dominantna, jaka, jasna, izvrsna, postojana i participativna kultura. U samoj završnici rada važno je ponoviti da su sve hipoteze potvrđene, te da su svi ciljevi istraživanja zadovoljeni. Također, treba naglasiti i to da je ljudski potencijali najvažniji u svakom preduzeću, bez obzira da li je riječ o mikro, malom, srednjem ili velikom preduzeću. Ljudski resursi su najvažniji momenat i pokretač svih dešavanja. Ljudski resursi su kreator organizacijske kulture, a ona je, kako je i istraživački dio pokazao, od presudne važnosti za uspjeh korporacije. Dakle, atraktivnost ove teme se ogleda sa jedne strane u potrebi menadžera za kvalitetnim kadrovima, koji će kreirati krajnje pozitivnu i produktivnu organizacijsku kulturu, a sa druge strane, u važnosti organizacijske kulture. Zasigurno će u budućnosti biti napisano jako veliki broj radova, stručnih i naučnih članaka na ovu temu, jer potencijal ove oblasti je jako veliki, a značaj govora o organizacijskoj kulturi i korproativnom upravljanju u ovom, turbolentom vremenu, jer nemjerljiv.

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CORPORATE GOVERNANCE AND ORGANISATIONAL CULTURE

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Abstract: *The interdependence of corporate governance and organizational culture has always existed. Corporate governance is present in large organizations, which we call joint stock companies in BiH. The organization's workflow, dividend payments, and day-to-day operations are monitored by people in charge of corporate governance. On the other hand, within each organization, and so on the corporations, a certain organizational culture is introduced, which is specific, and it is essentially known only by employees of a certain company. How much the real impact of organizational culture on corporate governance in BiH companies will be seen in the paper that follows. Corporative management is a form of governance that is characteristical for corporations, or for joint stock companies. Corporate governance, as a set of mechanisms by one corporation, grows and develops on the market, is of fundamental importance to developed countries of the world (United States - US, United Kingdom - UK, Germany, Canada, France and Japan). In the case of lower organizational forms of companies, capital owners often also make their management-management structure. The corporation represents such an organizational form of companies where there is a large number of capital owners whose ability to manage such an entity is insufficient, so they are required to engage professionally competent experts outside the business community (managers) to which they delegate the right to manage and manage. Organizational culture is a special form of culture that includes certain customs, attitudes, values, traditions and rituals. Organizational culture encompasses a system of ideas and concepts, customs, traditions, procedures and habits for acting in special macroeconomics. Organizational culture is a set of values, norms and beliefs.*

Keywords: *corporative governance, organisational culture.*

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KRATKO SAOPŠTENJE / SHORT REPORT

THE ROLE OF ENTREPRENEURIAL EDUCATION IN THE DEVELOPMENT OF ENTREPRENEURSHIP

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***Abstract**: The purpose of this article is to identify the connection between entrepreneurial education and the development of entrepreneurship and to reexamine the importance of education in an intention of starting a business venture. In the process of education skills, culture and attitudes on particular subjects are established. Entrepreneurial education especially enables the combination of experimental learning, skills development and, the most important thing, the change in the way of thinking of individuals. Researches have shown that entrepreneurship can be learned because education can help to achieve and increase the awareness and acceptance of entrepreneurship as a valuable career option. Entrepreneurial education is strategically directed towards establishing an entrepreneurial venture. Conducted meta-analysis shows that there is a positive link between entrepreneurial education and entrepreneurial intentions which confirms the success of the current entrepreneurial education programmes and the importance of further enhancing and developing those programmes.*

***Keywords:** entrepreneurial education, entrepreneurial intentions, entrepreneurship.*

***JEL**: L26, A20*

INTRODUCTION

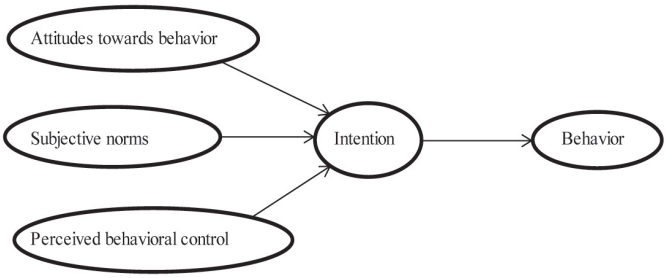
Entrepreneurship, as a key driver of innovations, represents a key resource of any economy (Schumperter, 1959). Innovation is a process of developing ideas which result in commercialization and practial use of new products, processes or services (Jakobson, 2007). Many industries see innovation as a key competitive advantage which requires detailed understanding of its dynamic nature and the quality of innovation strategies (Shilling, 2005). Intellectual capital is a pillar in

the knowledge economy and the increase in knowledge leads to new business opportunities. In a global environment universities are an important instrument in shaping national economies. Empirical research points to the conclusion that entrepreneurship can be taught, in other words that through education the awareness of entrepreneurship as a viable carrer option can be raised (Clark, Davis, and Harnish, 1984; Kantor, 1988). For this reason policymakers develop and implement different support systems for enhancing entrepreneurial activities, one example is the transformation of „classical„ universities into entrepreneurial universities which adopt entrepreneurship as an ideology and support technology transfers (Zhou, 2008). Given the importance of entrepreneurship and the transformation of universities, the question is how effective are universities in creating entrepreneurs, in other words can entrepreneurial education encourage students to become entrepreneurs. Many empirical researches tried to answer this question and the mayority used the theory of planned behavior as their theoretical basis.

LITERATURE REVIEW

In the domain of psychology a number of conceptual models were suggested in order to explain, affirm and predict behavior of individuals. Models that are based solely on individuals attitudes and, as well as, on exogenous factors have been showed to be poor predictors of behavior (Krueger, Reilly and Carsrud, 2000), although some empirical research pointed out that individuals intentions are the best predictor of behavior in some circumstances (Bagozzi, Baumgartner and Yi, 1992). Further models were developed that explain which factors influence intentions and subsequently behavior. The theory of reasoned action was proposed where attitudes and norms predict behavior (Fishbein and Ajzen, 1975). This theory, due to some deficiencies, was enhanced to the theory of planned behavior (Ajzen, 1991). The theory of planned behavior adds perceived behavioral control, so according to this theory, attitudes towards behavior, subjective norms and perceived behavioral control predict behavior. The theory of planned behavior is shown in picture 1.

Picture 1. The theory of planned behavior



Source: Adapted from Ajzen (1991).

Intentions are the strive in executing behavior, attitudes towards behavior represent motivational factors that influence behavior, subjective norms are the perceived pressure of the individuals' surroundings for engaging in behavior and the perceived behavioral control is the individuals perceived ability for conducting behavior (Ajzen, 1991).

This theory can be applied on any type of behavior and so it is applicable in research regarding entrepreneurial behavior because doing entrepreneurial activities can be regarded as a planned activity which is not only a reaction to stimuli. In addition, the theory of planned behavior is a good predictor of behavior in instances where the behavior is rare and where behavior is difficult to observe. Because of the above mentioned, entrepreneurship can be described using the theory of planned behavior (Krueger, Reilly and Carsrud, 2000). A new model is made by combining entrepreneurship and the theory of planned behavior in which attitudes towards entrepreneurship, subjective norms and perceived entrepreneurial abilities influence entrepreneurial intentions and subsequently doing entrepreneurship. In this model entrepreneurial intentions are the strive for self-employment, attitudes towards entrepreneurship make the difference between self-employment and having a job in a corporation, subjective norms represent the perception of the individual about the opinion of his community on the topic of self-employment and perceived entrepreneurial abilities are the perceived ability for self-employment (Kolvereid, 1996). This is the most frequently used model in the scientific literature for explaining and predicting if the individual will become an entrepreneur since, for instance, demographic characteristics are not sufficient in predicting any type of behavior. This is the primary reason why the theory of planned behavior is used in empirical research when investigating the influence of entrepreneurial education on entrepreneurial behavior. The argument is that entrepreneurial education can affect entrepreneurial behavior

because intentions, by definition, are based on perceptions from which it follows that they can be modified or changed.

It should be mentioned that this model uses a narrow definition of entrepreneurship, in other words other concepts that are embedded in the entrepreneurship theory, for instance corporate entrepreneurship, were not used (Pinchot, 1985). A wider definition of entrepreneurship is not frequently used in empirical studies because of the difficulty of measuring such concepts. As a result of a great number of empirical studies on the mentioned topic, two meta-analyses were carried out to determine the effect of entrepreneurial education on entrepreneurial intentions. They both show a statistically significant positive correlation between entrepreneurial education and entrepreneurial intentions (Bae, Qian, Miao and Fiet, 2014; Martin, McNally and Kay, 2013). In view of the fact that the last meta-analysis was conducted in 2014 and that there have been new published or working papers, a meta-anaylsis was carried out to see whether the findings would differ.

METHODOLOGY AND RESULTS

A meta analytic approach was choosen to determine the influence of entrepreneurial education on the intention for doing entrepreneurship. Meta-anaylsis is a quantitative form of literature review in which the goal is to identify average size effects, analyze their relationship and the relation between empirical findings (Card, 2012). The advantage of a meta-analysis is the possibility of compression of large numbers of data and, through their integration, answering relevant questions (Bartolucci, 2009). Statistical software STATA was used for carry outing the meta-analysis in this paper. Firstly, an online search for papers was made through databeses EBSCO, ProQuest, ScienceDirect, JStor and Google Scholar and the keywords that were used were „entrepreneurial education“ and „entrepreneurial intention“. Next, three criterias were placed for the inclusion of papers in the meta-analysis. For the paper to be included it had to be a primary research, the sample was comprised of university students and it had to use the theory of planned behavior in order to explain the effect of entrepreneurial education on the intent for doing entrepreneurial activities. The list of papers, a total of 45 papers, that fulfilled the mentioned criterias is shown in table 1.

Table 1. List of papers for the meta-analysis

Authors	Country	Sample size
Adekiya, A.A. and Ibrahim, F. (2016)	Nigeria	310
Ahmed, I. et al. (2010)	Pakistan	276
Ambad, S.N.A. and Damit, D.H.D.A. (2016)	Malesia	351
Aslam, T.M. et al. (2012)	Pakistan	197
Azhar, A. et al. (2011)	Pakistan	320
Babatunde, E.Y.B. and Durowaiye, B.E. (2014)	Nigeria	120
Barba-Sanchez, V. and Atienza-Sahuquillo, C. (2017)	Spain	423
Karimi, S. et al. (2012)	Iran	275
Byabashaija, W. et al. (2010)	Uganda	167
Chukwuma, E. and Ogbeide, E.D.O. (2017)	Nigeria	166
Denanyoh, R. et al. (2015)	Ghana	228
Dohse, D. and Walter, S.G. (2010)	Germany	1949
Ebewo, P.E. et al. (2017)	Botswana	343
Fayolle, A. and Gailly, B. (2015)	France	275
Gerba, D.T. (2012)	Ethiopia	156
Hamidi, D.Y. et al. (2008)	Sweden	78
Hussain, A. and Norashidad (2015)	Pakistan	499
Ismail, M. et al. (2013)	Malesia	123
Jeger, M. et al. (2014)	Croatia	333
Kokash, P.P.I.S.C.J.M.A.P.V.H. (2016)	Spain	382
Kolvereid, L. and Moen, O. (1997)	Norway	278
Kuttim, M. et al. (2014)	International	55781
Lanero, A. et al. (2011)	Spain	800
Linan, F. (2004)	Spain	166
Lorz, M. (2011)	International	272
Maresch, D. et al. (2016)	Austria	4548
Marques, C.S. et al. (2012)	Portugal	202
Muofhe, N.J. and Du Toit, W.F. (2011)	ZAR	269
Mwiya, B. (2015)	Zambia	432
Nabi, G. et al. (2016)	UK	150
Ndofirepi, T.M. and Rambe, P. (2017)	Zimbabwe	154
Ojogbo, L.U. et al. (2016)	Nigeria	386
Olomi, D.R. and Sinyamule, R.S. (2009)	Tanzania	509
Oyugi, J.L. (2016)	Uganda	255
Patricia and Silangen, C. (2016)	Indonesia	180

Potishuk, V. and Kratzer, J. (2017)	International	84
Rodriguez-Cohard, F.L.J.C. (2015)	Spain	135
Sanchez, J.C. (2013)	USA	864
Sultan, M.F. et al. (2016)	Pakistan	400
Tiago, T. et al. (2014)	International	734
Utami, C.W. (2017)	Indonesia	1237
Westhead, P. and Solesvik, M. (2016)	Norway	314
Wilson, F. et al. (2007)	USA	933
Wu, S. and Wu, L. (2008)	China	146
Zhao, H. et al. (2005)	USA	265

Source: Compiled by the authors.

The results from the selected papers were extracted and the appropriate transformations were made to get the effect sizes. Given the nature of the reported results, the Pearson correlation coefficient was used. If the paper reported the Pearson correlation coefficient it was modified using the Fischer transformation and if the paper did not report the Pearson correlation coefficient corrections were made before the Fischer transformation. After the Fischer transformations corrections for unreliability, more precisely internal consistency, were performed using the reported Cronbach's alpha coefficients. Cronbach's alpha coefficient for entrepreneurial intentions and entrepreneurial education were used. Some studies did not report the Cronbach's alpha coefficient so an arithmetic mean was calculated for those coefficients that were reported and that mean was added, for the consistency of the meta-analysis, to the papers that did not report the coefficient. Additionally, a Egger's test for small-study effects was carried out. Finally, using the Cochrane Q test and the I^2 index the appropriate model was chosen. The results of the meta-analysis are displayed in table 2.

Table 2. Results of the meta-analysis

	Association of entrepreneurial education on entrepreneurial intention	**sig.**
Cochrane's Q (df=46)	17269,91	p<0.01
I^2	99,73%	-
Random effects mean ρ	0,337	p<0.01
95% confidence interval	0,106-0,534	-
Egger's test	4,34 (3,44)	p>0.1

Source: Authors' own calculation. Note: Standard errors in parenthesis.

From the value of Cochrane's Q we can reject the null hypothesis on 1% significance level and conclude that the effect sizes are heterogeneous. Additionally, we can conclude that there is a large amount of heterogeneity since the I^2 index is 99,73%. From these results it follows that the appropriate model to use is the random effects model, more precisely the DerSimonian-Laird random effects model. To account for publication bias the Egger's test was conducted and we fail to reject the null hypothesis from which we can conclude that there are no small study effects, in other words that we do not find presence of publication bias. Finally, the random effects mean, or the correlation coefficient, is positive and statistically significant on 1% level of significance, so we can conclude that there is a positive correlation between entrepreneurial education in universities and entrepreneurial intentions of those students.

CONCLUSION

Entrepreneurship is one foundation on which national economies can develop and progress. The educational system is one channel through which individuals can be encouraged to participate in the entrepreneurial activities, especially in light of the fact that there is an increase in number of entrepreneurial universities. With the increase in number of such universities and the number of entrepreneurial courses, there is an increase in interest of empirical research on the influence of entrepreneurial education on engagement in entrepreneurship. Most studies use the theory of planned behavior as their conceptual model. Given the large number of studies that use the same theoretical basis, two meta-analysis were conducted in 2013 and 2014 which found that there was a positive correlation between entrepreneurial education and entrepreneurial intentions. Since then there was an increase in the number of studies, so a meta-analysis was carried out, using only papers on university courses, to determine whether there was any change from the mentioned meta-analysis. From the results of the meta-analysis we can conclude that there is a statistically significant positive correlation between entrepreneurial education and entrepreneurial intentions. The correlation coefficient was higher than in the mentioned two meta-analysis. The limitation of this and other meta-anaylsis on this topic is the use of a narrow definition of entrepreneurship. Modern concepts of entrepreneurship include for instance corporate entrepreneurship, no just the process of firm formation. Future research and subsequent meta-analysis should include the wider definition of entrepreneurship. Despite the mentioned limitation, the implication of this paper is that entrepreneurial education can lead to increase in entrepreneurship in the economy so a stronger emphasis from policymakers and universities should be made on entrepreneurial education.

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UPUTSTVA ZA AUTORE

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Chaston, I. and Mangles, T. (2002), *Small business marketing management*, Creative Print & Desing (NJales), London, str.148.

Hills, G. (1995), "Forenjord," *Marketing and Entrepreneurship in SME*, No. 2/95, str. 25.

EUROSTAT Database (http://epp.eurostat.ec.europa.eu/portal/page/portal/european_business/); pristup bazi: IV 2011.

PRIMJERI NAVOĐENJA PREMA AEA PUBLIKACIJI

Novinski članci

A) Objavljeni Članci

Prezime autora, ime. godina. "Naslov članka." *Naslov časopisa*, Tom (br. broj ako je primjenjivo): brojevi stranica.

Primjer: **Acemoglu, Daron**. 2002. "Tehničke promjene, nejednakost i tržište rada." *Journal of Economic Literature*, 40 (1): 7-72.

Kada su u pitanju dva autora, samo se ime prvog autora daje obrnuto i stavlja se zarez prije i poslije imena prvog autora ili inicijala. Između dva autora treba staviti veznik «i».

Primjer: **Baker, George, Robert Gibbons, i Kevin J. Murphy**. 2002. "Ugovori i teorija fi rme." *Quartely Journal of Economics*, 117 (1): 39-84.

B) Najavljeni članci

Primjer: **Bikhchandani, Sushil, i Joseph M. Ostroy**. Najavljen. "Ascending Price Vickery Auctions". *Games and Economic Behavior*.

Knjige

A) Jedan autor

Prezime autora, Ime autora. godina. *Naslov knjige*. Mjesto izdanja: Izdavač.

Primjer: **Fridman, Tomas L**. 2005. *Svijet je ravan: Kratka istorija dvadeset prvog vijeka.* Njujork: Farrar, Straus and Giroux.

B) Dva autora

Primjer: **Helpman, Elhanan, i Pol Krugman**. 1985. *Struktura tržišta i spoljna trgovine: Povećanje prihoda, nesavršena konkurencija, i Međunarodna ekonomija*. Cambridge MA: MIT Press.

C) Poglavlje u knjizi

Prezime autora, Ime autora. godina. "Glava ili naslov članka." U *Naslov knjige*, a zatim ed. i ime/na urednika ako je potrebno, i broj stranice(a). Mjesto izdanja: Izdavač.

Primjer: **Freemen, Richard B**. 1993. "Koliko je nestajanje sindikata doprinijelo povećanju jednakosti zarada muškaraca?" U *Uneven Tide*: *Rising Income Inequality in America,* ed. Sheldon Danzinger i Peter Gottschalk, 133-63. Njujork: Rasel Sage Foundation.

D) Reprint ili savremeno izdanje

Kada se naglašava raniji datum: Prezime autora, Ime autora. Raniji datum štampanja.

Naslov. Mjesto izdavanja: Izdavač, kasniji datum.

Primjer 1: **Rawls, John**. 1971. *Teorija pravde*. Cambridge MA: Harvard University Press, 1999.

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Primjer 2: **Rawls, John**. 1999. *Teorija pravde*. Cambridge MA: Harvard University Press, (Prvo izdanje 1971).

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Kada se koristi ili citira neko izdanje koje nije prvo, broj ili opis izdanja se navode iza naslova.

Primjer: **Strunk, Villliam, Jr., i E. B. White**. 2000. *Elementi stila*. 4. izd. Njujork: Allyn and Bacon.

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Primjer 3: **Mokyr, Joel**, izd. 2003. *The Oxford Encyclopedia of Economic History*. 5 tomova. Oxford: Oxford University Press.

NEOBJAVLJENI RADOVI

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Primjer 1: **Ausubel, Lorens M.,** 1997. "Efi kasna rastuća ponuda aukciji za više objekata." Radni materijal Fakulteta Univerziteta u Merilendu 97-06.

Primjer 2: **Heidhues, Paul, i Botond Koszegi**. 2005. "Uticaj averzije potrošača na cijenu." Materijal za raspravu Centra za istraživanje ekonomske politike 4849.

B) Predavanja i radovi predstavljeni na sastancima

Prezime autora, Ime autora. Godina. "Naslov". Rad predstavljen na sastanku slijedi naziv, mjesto i grad u kome je predavanje/sastanak održan.

Primjer 1: **Romer, Kristina D., i Dejvid H. Romer**. 2006 "Evolucija ekonomskog razumijevanja i poslijeratna politika stabilizacije." Rad prezentovan na simpozijumu Rethinking Stabiliyation Policy Federal Reserve Bank of Kanzas, Jackson Hole, WY.

Primjer 2: **Goldin, Claudia**. 2006. "Tiha revolucija koja je transformisala zapošljavanje žena, obrazovanje i porodicu." Rad predstavljen na godišnjem sastanku Allied Social Science Associations, Boston.

V) Neobjavljeni radovi

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Primjer 1: **Zeitzewitz, Erik**. 2006. "How Widespread Was Late Trading in Mutual Funds". http://facultygsb.stanford.edu/zitzewitz.

Primjer 2: **Factiva**. 2006. "Blogging and Your Corporate Reputation: Part One-Listen to the Conversation." http://www.factiva.com/collateral/download_brchr.asp?node=menuElem1506 #white.

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D) Teza i doktorske disertacije

Prezime autora, Ime autora. godina. "Naslov". Doktorska disertacija. Univerzitet. *Primjer*: **Nash, John**. 1950. "Non-Cooperative Games." Doktorska disertacija. Univerzitet Prinston.

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Primjer 1: **Factiva.** 2006. Dow Jones Reuters Business Interactive LLC. www.factiva.com (pristupljeno 5. juna 2006. g.).

Primjer 2: **Biography Resource Center.** 2006. Tomas Gale. http://www.galegroup.com/BiographyRC/(pristupljeno 25. septembra 2006. g.).

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ČLANCI IZ ČASOPISA

A) Autorizovani članci

Prezime autora, Ime autora. Godina. "Naslov". *Časopis*. Mjesec ili datum, broj stranice (a).

Primjer: **Belkin, Lisa**. 2003. "The Opt-out Revolution." *New York Times magazine*. 26. oktobar , 23-32.

B) Neautorizovani članci

Časopis. Godina. "Naslov", mjesec ili datum, broj stranica.

Primjer: *"The Economist"*. 1991. "The Ins and Outs of Outsourcing,» 31. avgust, 54-56.

Članci iz časopisa na Internetu

Prezime autora, Ime autora. Godina. "Naslov". *Časopis*, datum. URL adresa.

Primjer: **Becker, Gary S.** 1993. "The Evidence against Blacks Doesn't Prove Bias." *Business Week*, 19. aprila. http://bvarchive.businessveek.com/indek.jsp.

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Reference to articles and books in the text. Give full name (first name, middle initial and last name) of author(s) and year of publication in the first citation, with page numbers where appropriate. For example: Glenn Firebaugh (1999) [first reference]; Firebaugh (1999) [subsequently]; Andrea Boltho and Gianni Toniolo (1999) [first reference], Boltho and Toniolo (1999) [subsequently]; Albert Berry, Francois Bourguignon, and Chris titan Morrison (1983) [first reference], Berry, Bourguignon, and Morrison (1983) [subset quaintly]. When citing more than one work by the same author, give the last name of author and year of publication in parentheses for each subsequent citation. When listing a list of references within the text, arrange them first in chronological order, then alphabetically according to years. If there are four or more authors, refer to the first author, followed by et al. and the year; for example: Stefan Folster et al. (1998). If there is more than one publication referred to in the same year by the author(s), use the year and letters a, b, etc. (example: 1997a, b). References to authors in the text must match exactly those in the Reference section.

Proposal for references to the authors in the text: [Lukas, 2005:4]

Quotations. Any quotation, regardless of its length, needs to include reference and page number. For any quotation longer than 350 characters, the author must have written approval by copy rights owner that needs to be enclosed.

Tables, charts, and pictures. Tables and graphs need to be made in Word or some oth er Word compatible format. Tables and graphs from statistical programs should be trans ferred into Word format. Same data must not be presented both in tables and charts. Every table, chart, or picture should be marked with a number and adequate name, e.g.: Table 2: Variables Reliability. Name of tables, graphics or picture is placed above, TNR 11, normal, two spaces between table and text. If illustration from printing source is used, written authorization by copy rights owner is necessary. Source should be placed below tables, charts, and pic tures. **Source font: TNR 11, italic.** References in the Source are used in the same way as in the text. If the tables, charts, and figures are author'(s') calculations, reviews or estimations, that should also be emphasized.

Statistics. The results of statistical tests need to be provided in the following form: F (1.9) =25.35; p<001 or similar. Lower number of conventional P levels should be stated (e.g.: .05, .01, .001).

References. Use AEA rules for references, which are mentioned within the text. Reference section must be single-spaced, beginning on a new page following the text, giving full information. Use full names of authors or editors using initials only if that is the usage of the particular au thorn/editor. List all author/editors up to/ including 10 names. Authors of articles and books and material without specific authors or editors, such as government documents, bulletins, or newspapers, are to be listed alphabetically. Most references in the Reference section should be referenced (included) in the text.

Appendix. In the appendix, only those descriptions of material that would be useful for readers to understand, evaluate, or revise research should be provided.

Footnotes and abbreviations. If necessary, references in the footnotes should be used in the same way as in the text. Abbreviations should be avoided, except from exceptionally usual ones. The abbreviations stated in tables and pictures should be explained.

Reviews and publishing. All papers are anonymously reviewed by two anonymous re viewers.

On the basis of reviews, editorial staff makes decision on paper publishing and informs the author about it within three months from paper receipt.

EXAMPLES OF APA PUBLICATION REFERENCES

Chaston, I. and Mangles, T. (2002), *Small business marketing management***,** Creative Print & Desing (N Jales), London, str. 148.

Hills, G. (1995), "Forenjord," *Marketing and Entrepreneurship in SME***,** No. 2/95, str. 25.

EUROSTAT Database (http://epp.eurostat.ec.europa.eu/portal/page/portal/european_business/); pristup bazi: IV 2011.

EXAMPLES OF APA PUBLICATION REFERENCES JOURNAL ARTICLES

A) Published Articles

Author Last name, First name. Year. "Article Title." *Journal Title,* Volume (Issue number if applicable): Page numbers.

Example: **Acemoglu, Daron.** 2002. "Technical Change, Inequality, and the Labour Market." *Journal of Economic Literature,* 40(1): 7-72.

In the case of two authors, only the first author's name is inverted and a comma must be placed before and after the first author's first name or initials. Use "and" between the two author'(s') names.

Example: **Baker, George, Robert Gibbons, and Kevin J. Murphy.** 2002. "Relational Contracts and the Theory of the Firm." *Quarterly Journal of Economics,*117(1): 39-84.

B) Forthcoming Articles

Example: **Bikhchandani, Sushil, and Joseph M. Ostroy.** Forthcoming. "Ascending Price Vickery Auctions." *Games and Economic Behavior.*

Books

A) One Author

Author Last name, First name. Year. *Book Title.* Place of publication: Publisher.

Example: **Friedman, Thomas L.** 2005. *The World Is Flat: A Brief History of the Twenty-First Century.* New York: Farrar, Straus and Giroux.

B) Two Authors

Example: **Helpman, Elhanan, and Paul Krugman.** 1985. *Market Structure and Foreign Trade: Increasing Returns, Imperfect Competition, and International Economy.* Cam bridge, MA: MIT Press.

C) Chapter in a Book

Author Last name, First name. Year. "Chapter or Article Title." In *Book Title,* followed by ed. and editor'(s') names if appropriate, and page number(s). Place of publication: Publisher.

Example: **Freeman, Richard B.** 1993. "How Much Has De Unionization Contributed to the Rise in Male Earnings Equality?" In *Uneven Tide: Rising Income Inequality in America,* ed. Sheldon Dan zinger and Peter Gottschalk, 133-63. New York: Russell Sage Foundation.

D) Reprint or Modern Edition

When emphasizing earlier date: Author Last name, First name. Earlier printing date. *Title.* Place of publication: Publisher, Later date.

Example 1: **Rawls, John.** 1971. *A Theory of Justice.* Cambridge, MA: Harvard University Press, 1999. When emphasizing later date: Author Last name, First name. *Title.* Place of publication: Publisher, (Orig. pub. date).

Example 2: **Rawls, John.** 1999. *A Theory of Justice.* Cambridge, MA: Harvard University Press, (Orig. pub. 1971).

E) Editions Other Than the First

When an edition other than the first is used or cited, the number or description of the edition follows the title in the listing.

Example: **Strunk, Willliam, Jr., and E. B. White.** 2000. *The Elements of Style.* 4th ed. New York: Ally and Bacon.

Multivolume Works

Multivolume works include works such as encyclopedias, multivolume works published over several years, and multivolume works published in a single year.Below are several examples.

Example 1: **Kohama, Hirohisa,** ed. 2003. *Asian Development Experience.* Vol. 1, *Extern nil Factors in Asian Development.* Singapore: Institute of Southeast Asian Studies.

Example 2: **Kusuoka, Shigeo, and Akira Yamazaki,** ed. 2006. *Advances in Mathemati cal Economics.* Vol. 8. New York: Springer.

Example 3: **Mokyr, Joel,** ed. 2003. *The Oxford Encyclopedia of Economic History.* 5 Vols. Oxford: Oxford University Press.

UNPUBLISHED PAPERS

A) Working Papers

Only papers appearing as part of an institutions' working papers series should be classified as working papers. These should always include a specific working paper number as assigned by the institution. Author Last name, First name. Year. "*Title*." Type of Working Paper (such as institution, working series title) and number.

Example 1: **Ausubel, Lawrence M.** 1997. "An Effi cient Ascending-Bid Auction for Multiple Objects." University of Maryland Faculty Working Paper 97-06.

Example 2: **Heidhues, Paul, and Botond Koszegi.** 2005. "The Impact of Consumer Loss Aversion on Pricing." Centre for Economic Policy Research Discussion Paper 4849.

B) Lectures and Papers Presented at Meetings

Author Last name, First name. Year. "Title." Paper presented at followed by meeting name, place, and city where lecture/meeting took place.

Example 1: **Romer, Christina D., and David H. Romer.** 2006."The Evolution of Economic Understanding and Postwar Stabilization Policy." Paper presented at the Rethinking Stabilization Policy Federal Reserve Bank of Kansas Symposium, Jackson Hole, WY.

Example 2: **Goldin, Claudia.** 2006. "The Quiet Revolution That Transformed Women's Employment, Education, and Family." Paper presented at the annual meeting of the Allied Social Science Associations, Boston.

C) Unpublished Papers

When a paper has not been published but can be found on the Web (such as the author's Web site or the university Web site), use the following format: Author Last name, First name. Year. "Title." Web address. Please provide a URL that links to the full text of the article.

Example 1: **Zeitzewitz, Eric.** 2006. "How Widespread Was Late Trading in Mutual Funds." http://facultygsb.stanford.edu/zitzewitz.

Example 2: **Factiva.** 2006. "Blogging and your Corporate Reputation: Part One -Listen to the Conversation." http://www. factiva. co m/collateral/download_brchr. asp?node=menuElem1506#white.

When a paper has not been published and does not appear on a Web site (such as the author's Web site or university Web site), use the following format: Author Last name, First name. Year. "Title." Unpublished.

Example 3: **Acemoglu, Daron, Pol Atras, and Elhanan Helpman.** 2006. "Contracts and Technology Adoption." Unpublished.

D) Theses and Dissertations

Author Last name, First name. Year. "Title." PhD diss. University.

Example: **Nash, John.** 1950. "Non-Cooperative Games." PhD diss. Princeton University.

WEB SITES

This is for the reference research done on a Web site. If you want to cite a specific article, document, lecture, speech, etc., see the reference examples for those types of doc unmints.

Web Site Name. Year accessed. Publisher/Company. URL (access date).

Example 1: **Factiva.** 2006. Dow Jones Reuters Business Interactive LLC. www.factiva.com (accessed June 5, 2006).

Example 2: **Biography Resource Center.** 2006. Thomas Gale. http://www.galegroup.com/BiographyRC/(accessed September 25, 2006).

Newspapers, Online Dictionaries, Encyclopedias, and Reference Works

Because newspapers, online dictionaries, encyclopedias, and databases are being continuously updated, they should be cited as a footnote in the text. It should NOT be included in the reference list. The note should always include an access date along with the URL. If possible, use the appropriate URL for the site entry rather than the general URL. If you are citing the definition for "nepotism" in the Merriam-Webster Online Dictionary, use http://www.m-w.com/dictionary/nepotism rather than http://www.m-w.coml.

MAGAZINE ARTICLES

A) Authorized Articles

Author Last name, First name. Year. "Title." *Magazine.* Month or date, page number(s).

Example: **Belkin, Lisa.** 2003. "The Opt-out Revolution." *New York Times Magazine.* October 26, 23-32.

B) Non-authorized Articles

Magazine. Year. "Title," Month or date, page numbers.

Example: The Economist. 1991. "The Ins and Outs of Outsourcing ," August 31, 54-56.

Online Magazine Articles

Author Last name, First name. Year. "Title." *Magazine,* date. URL.

Example: **Becker, Gary S.** 1993. "The Evidence against Blacks Doesn't Prove Bias." *Business Week,* April 19. http://bwarchive.businessweek.com/index.jsp.

Sadržaj/Contents

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