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Department of Economics

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ECONOMIC GROWTH, GLOBALIZATION AND INCOME INEQUALITY: THE CASE OF UKRAINE

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Abstract. Income inequality has been widely debated since the beginning of the economic development and this topic is especially present in today's economic world. As hypotheses, as a rule, statements are tested: economic growth leads first to an increase, and then to a decrease in inequality; high income differentiation stimulates higher growth rates; the processes of globalization contribute to reducing inequalities in the world. The purpose of the empirical part of the present research is to analyze the relationships between income inequality and economic growth, income inequality and globalization. The study has employed a single-country regression to investigate the existence of the Kuznets curve hypothesis for the Ukraine economy over the period 1995-2016. The bounds testing (ARDL) approach to cointegration is applied to examine the long-run relationship between the variables. The results, when regressing Gini index and GDP per capita based on purchasing power parity, confirm the presence of hidden cointegration. The Granger causality test is also applied in order to test the existence of a causal relationship between the economic growth and income inequality. We examine the globalization-income inequality relationship and causality. Globalization is measured by the KOF globalization index. For case of Ukraine results show that globalization and income inequality are positively correlated, Granger causality was confirmed.

Keywords: income inequality, economic growth, globalization, hidden cointegration, bounds testing approach

JEL Classification: C01, C12, D63, F63

1. Introduction

One of the most important goals of the economic policy of any state is to ensure sustainable economic growth, which is understood as the growth of welfare, as well as an increase in the national wealth of the country. When solving problems and developing mechanisms of measures to achieve this goal more and more attention is paid to the problems of inequality and poverty.

Currently, among the problems actively discussed by researchers regarding inequality its relationship with the productivity of the economy or with economic growth. Researches of inequality represent both the development of theoretical concepts and economic and mathematical models, and an empirical analysis of statistical dependencies between these

indicators in the form of spatial data and in dynamics. However, numerous scientific works aimed at studying the mutual influence of economic growth and inequality in the distribution of income, and could not give an unambiguous answer about the nature of this influence. Some theorists suggest that economic growth affects the level of income inequality, while others - inequality affects the rates of development. There are a number of theories in which both variables are positively correlated, in other theories a negative relationship is proved. As a conclusion, two statements are most often used: (i) economic growth leads to increased first, and then to reduce inequalities; (ii) high income differentiation stimulates higher growth rates. At the end of the last century, the economic data provided enough examples of that says about the limitations of these concepts: economic growth was accompanied by both strengthening and weakening of inequality, and high growth rates were achieved with initially low income differentiation. For example, China's economy is characterized not only by high rates of economic growth, but also by a high level of income inequality. On the other hand, a high level of differentiation of the population by income can lead to social and political conflicts, thereby impeding economic growth. There are a number of channels through which inequality can have a negative impact on economic growth: imperfect credit market, the threat of socio-political stability, limiting investment in human capital, and so on. It is also worth emphasizing that in the framework of the research, developed countries were most often considered. Among the post-Soviet states, the most of researches was conducted for the Russian Federation, Belarus and Kazakhstan, while the situation in Ukraine is still not until the end studied. In the current study, the authors attempted to confirm or disprove the existence of the relationship between economic growth and income inequality using econometric methods.

2. The Impact of Economic Growth on Income Inequality

This relationship was first investigated by the American economist S. Kuznets, which showed that economic growth first leads to an increase in inequality, and then to its decreasing. (Kuznets, 1955) Over the years, the U-shaped Kuznets curve has been subjected to a large number of tests, which resulted in both confirmation of the conclusions obtained by S. Kuznets and their refutation. For example, F. Paukert and M. Ahluwalia found evidence of the existence of an inverted Kuznets curve for developing countries. (Paukert, 1973; Ahluwalia, 1976) However, Oshima studies have shown that there is a relationship of such a form, however, but it must be taken into account that generalizations concerning inter-country models need to be made taking into account the huge historical, physical, regional, political, racial and religious differences. (Oshima, 1962)

Deininger and Squire tried to more fully test the hypothesis Kuznets. First, they used a more qualitative data than previous researchers. Secondly, for different countries, comparable data were used for several moments of time. The result for their sample was that no evidence was found for an inverted U-model for individual countries. In most cases, it has not been possible to find any significant changes in income distribution over the past decades. It was then further explored the question of whether there is a link between rapid growth and growing inequality, and again there was found no systematic evidence in favor of such laws. (Deininger & Squire, 1998)

These results are consistent with earlier research Ravallion and Chen, who also did not find a systematic relationship between growth rate and inequality. This indicated that the

economic policy aimed at rapid economic growth, is a vital element in poverty reduction strategies. (Ravallion & Chen, 1996) However, it is obvious that the impact of growth on the poor depends on how the benefits are distributed among the population. Therefore, Deininger and Squire (1998), studying economic growth and the share of income of various groups, investigated how the initial inequality, and also how the change in inequality affect poverty. It was found that the poor (up to 20 percent of the poorest) are the most affected by the economic downturn, as well as benefit from the measures that stimulate economic growth than the richest 20 percent. In addition, Ravallion and Chen (1997), analyzing data from household surveys in 67 developing countries over the period 1981-1994, also found that empirically there is a very strong correlation between the growth of per capita income and poverty reduction. It is worth noting that even if there is a strong link between GDP growth and poverty reduction, it may turn out that countries with initially serious income inequalities may be less successful in reducing poverty. The same conclusion was reached by M. Kean and E. Prasad on the results of a study of 14 countries with transition economies. (Keane & Prasad, 2001) Also they showed that similar results hold if one examines alternative inequality measures such as quantile ratios, quantile shares, or kernel density estimates of the income distribution.

3. The Impact of Income Inequality on Economic Growth

For the first time the idea of the existence of the impact of inequality in the distribution of income on economic growth was formulated in the mid-20th century by N. Kaldor. (Kaldor, 1956) Also mention should be made of the publications of R. Barro and P. Figini. (Barro, 2000; Figini, 1999). Barro identified four key channels in explaining the impact of inequality on economic growth: imperfect credit markets, political process, socio-economic tensions, differences in saving rates. Figini, in turn, considered the inequality in the distribution of income at the household level, as well as its demographic and socio-psychological consequences.

While some models, such as the Harrod-Domar model, predicted that greater inequality would lead to higher growth rates, in the 1990s an opposite phenomenon was observed: greater inequality led to a lower level of the total growth. Therefore, some empirical evidence in both industrialized and less developed countries, as a rule, confirms the negative impact of inequality on growth.

Such a link was found in cross-country data. (Persson & Tabellini, 1994; Alesina & Rodrik, 1994) The mentioned authors interpreted the results in the context of the political economy, and their argument was that when the inequality is high level, the median voter will seek high (distorting) taxes on the wealthiers, which will have a deterrent effect on savings, which in turn will lead to reduction of economic growth. However, further verifications of this proposal have questioned its validity, and evidence of distracting effects of taxation is still rather weak.

Another possible way from inequality to growth is through social conflicts, when inequality leads to increased political instability, which leads to a decrease in efficiency and investment level, and then to a recession. (Alesina & Perotti, 1996) It was also argued that instability reduces the ability of governments to respond to external shocks. (Rodrik, 1999). Deininger and Squire tested the link between inequality and growth, but found no consistent

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relationship between the level of initial income inequality and growth. (Deininger & Squire, 1998) Nevertheless, they found that high income inequality in poor countries has a significant negative impact on future growth. This can be explained by the fact that for poor countries it may not be possible to finance the training or make other investments. The lack of assets can also reduce opportunities for participation in the political process and, consequently, also reduce access to resources. As soon as countries become rich enough, this link between high inequality and low growth seems to disappear. The authors of another study found that low income inequality in East Asia contributed to rapid economic growth. In addition, policies aimed at reducing poverty and income inequality, such as improving basic education and measures that increase the demand for labor, also stimulated economic growth. (Birdsall et al., 1995)

Forbes conducted a study of panel data using a method that allows for the consideration of the fixed effects for countries to assess how the inequality in a country affects its growth. Then, contrary to previous studies, she found a stable and significant positive relationship between income inequality and growth. (Forbes, 2000) It is also interesting to note that Forbes argues that the problem in the papers of authors who previously received a negative impact of inequality on economic growth could be that the authors used non-comparable data on inequality in cross-section samples (since data on some countries had to be collected from "national sources"), and also that the data was of poor quality. It is also interesting to note the result obtained in the paper by C. Sonin. (Sonin, 2000). The main aim of the work was to evaluate how affects property rights protection on economic growth in Russian regions over the period 1994-1997. According to the model proposed by the author, the direct impact of inequality on economic growth should be negative, because in the case of low protection of property rights, economic agents tend to spend resources on consumption, rather than on investment, which leads to slower economic growth. However, this conclusion is wrong, if we talk about the indirect impact of inequality on growth. Indirect impact must be positive, since the greater the inequality, the more poor voters, the more demand for the protection of property rights. Moreover, the poorer the "losers" from redistribution, the less attractive is the redistribution for the "winners".

Thus the analysis of papers on this topic showed that in some of them noted the negative effect of inequality in the distribution of income on economic growth, while other authors conclude that there is a positive impact of inequality on economic growth, and still others prove the existence of a complex, non-linear relationship between income inequality and economic growth.

4. Research Results

To analyze the relationship between economic growth and income inequality were considered such factors as the Gini index and the gross domestic product (at purchasing power parity) per capita. The study used data from the World Bank for Ukraine for the period 1995-2016. Alternative indicators of income inequality also considered the decile ratio and the quintile ratio. In general, the results obtained not dependent on the choice of indicators of income inequality. Additionally, considered an indicator such as the globalization index KOF. KOF globalization index was created by Axel Dreher (Swiss Economic Institute) in 2002. It includes economic, social and political dimension of globalization. Globalization generally has o direct significant impact on the economic growth. Some researchers examining the links

with economic, social and political dimensions of globalization separately, it was found that considerable political engagements have negative effect on growth. And economic and social globalization effects on countries economic growth depend on a country's economic situation: i) economic integration does not have statistically significant impact on relatively less developed countries and has positive effect in the group of more developed countries; ii) social globalization has statistically significant impact on relatively less developed countries and has negative effect in the group of more developed countries. (Butkus et al., 2017). In the current study, the authors were to a greater extent interested in the issue of its mutual influence with the income inequality indicator.

For this research authors have chosen two hypotheses. These hypotheses are the following: (I) Existence of the cointegration between income inequality (variable GINI) and gross domestic product (variable GDP); (II) Detecting the presence and absence of causal relationships between income inequality (variable GINI) and globalization (variable KOF).

4.1 Testing Hypotheses I

In the preliminary analysis of the data of strict dependence of Kuznets for the considered sample it was not found out. At the same time, the linear correlation coefficient of the GINI and GDP for Ukraine was -0.84, which indicates a significant negative relationship between the level of development of the economy and the degree of differentiation of household incomes.

Results of testing for the presence of a unit root using Augmented Dickey–Fuller test (ADF) allowed it possible to conclude that the time series of the indicators under consideration are nonstationary and integrated order one.

The basic equation, from which the analysis of mutual influence begins, establishes the possibility of the presence of cointegration between the investigated indicators and has the form:

$$GDP = \underset{(0.00)}{15916} - \underset{(0.00)}{319.7}\,GINI; \quad R^2 = 0.702; \quad DW = 0.559,$$
$$DW > d_{0.05} = 0.386, \; P_{ADF} = 0.013 \Rightarrow H_1 : e_t \sim I(0) \tag{1}$$

The results of the verification of rule Co-integrating Regression Durbin-Watson (CRDW) and ADF-test confirm the hypothesis of stationarity of random error term or residuals of the model (1), therefore, it is a cointegration model in explicit form. At the same time, experiments with models have shown that the actualization of data leads to a decrease in the value of statistics DW and to an increase in the P-value of the ADF-test, which leads to the conclusion that there is no cointegration.

To further analyze the relationship between the time series of indicator dynamics, an approach based on the search for hidden cointegration was used. Hidden cointegration is a case of non-linear cointegration, which determines the presence of cointegration between the components of time series, but not between their levels. As an example, we can cite cases where time series have the same behavior only for impulses (shocks) of a particular type. In such cases, in spite of the lack of cointegration between the initial variables, separately taken positive and negative components of the original series can be cointegrated. In our study, as a time series components of GINI and GDP were taken deviation from the average value of each series. To identify hidden cointegration, a autoregressive distributed lags (ARDL) model

was considered, in which the components of the original series are included as a variables. Four models have been evaluated to verify the cointegration between components, testing the hypothesis of absence cointegration was carried out using bounds test (Granger and Yoon, 2002):

$$dy_t = a_0 + \sum_{i=1}^{m} a_{1i} dy_{t-i} + \sum_{i=1}^{m} a_{2i} dx_{t-i} + \beta_1 y_{t-1} + \beta_2 x_{t-1} + \varepsilon_t,$$

$$H_0 : \beta_1 = \beta_2 = 0.$$

(2)

The hypothesis of the absence of cointegration is verified using F-statistics and critical points I(0) and I(1). If the value of F-statistics is higher than the critical point I(1), the hypothesis of the absence of cointegration is rejected. In the case where the value of F-statistics is lower I(0) the hypothesis H_0 is accepted. If the value of the F-statistic lies between the critical points I(0) and I(1), then we can not make a conclusion about the cointegration (uncertainty zone). Selection of the optimal lag was based on Akaike information criterion (AIC). Tab. 1 presents results of the bounds test of a nonlinear autoregressive distributed lags (NARDL) model (2).

Table 1: Bounds test results

GINI	GDP	R^2	$I_{1\%}(0)$	$I_{1\%}(1)$	$F_{bounds\ test}$	Hypothesis
positive	positive	0.996	6.84	7.84	7.01	H_0
positive	negative	0.997	6.84	7.84	11.88	H_1
negative	positive	0.993	6.84	7.84	6.00	H_0
negative	negative	0.974	6.84	7.84	1.821	H_0

Source: (Own estimation using EViews software)

Based on the estimates of the models described above, it can be concluded that at a 1% level of significance, the component reflecting the positive dynamics of the GINI index is cointegrated with the component, reflecting the negative dynamics of GDP, the remaining results of test at the considered level α indicate that there is no cointegration between the corresponding components. This confirms the negative relationship between indicators and in the case of economic slowdown should be expected stratification of the population by income to a greater extent. An interesting conclusion is that there is no link between the negative components of the indicators at any level of significance. Cointegration in the two remaining variants is observed only for certain values of the significance level: between the positive components of the indicators with an alpha level of 0.025 (2.5%); between the component reflecting the negative dynamics of the GINI index and the component reflecting the positive dynamics GDP – at the α=0.05 (5%). In other words, in the analysis of these interdependencies for Ukraine, we find that the more likely one can expect the growing income inequality if the growth rate of the economy decreases, but with the same assumptions regarding the significance level – the positive economic growth will not lead to a decrease in population stratification by income.

4.2 Testing Hypotheses II

When testing the hypothesis II, it was decided to use the Granger causality test. Since the presence of a statistically significant correlation between all the indicators considered limits

the use of multiple regression analysis methods. Tab. 2 presents results of Granger causality test, where h – number of tested lags.

Table 2: Pairwise Granger Causality Tests

Null Hypothesis	h=1	h=2	h=3	h=4	h=5	h=6
GINI does not Granger Cause KOF	0.292	0.615	0.123	0.026	0.079	0.103
KOF does not Granger Cause GINI	0.013	0,047	0.068	0.261	0.537	0.435

Source: (Own estimation using EViews software)

At the $\alpha=5\%$ level of significance the results of the Granger causality test allow us to confirm our original assumption about the presence of influence of KOF Globalization Index on GINI at h=1 and h=2, as well as at h=3 with an alpha level of 0.07 (7%). And then we can observe a change in the direction of the relationship. An empirical analysis of the data for the case of Ukraine showed that between the studied indicators GINI and KOF observed a linear relationship, with a certain increase in the variance of GINI with growth of KOF values. Based on the results of the conducted testing, we can talk about the presence of mutual influence between globalization and income inequality.

5. Conclusion

An analysis of the results of empirical studies of the relationship between economic growth and income inequality shows that the results largely depend on the choice of the model specification and the quality of the data used. The authors applied the bounds testing (ARDL) approach to cointegration to examine the long-run relationship between these variables. It can be said that the presence of significant inter-influence for these indicators was confirmed, which manifests itself to a greater extent in the case of the relationship between the positive component of the Gini index and the component, that reflects the negative dynamics GDP. From the authors' point of view, hidden cointegration explains some of the studies in which conflicting results were obtained regarding the tested relationship. Also in the study, the authors tested the causal relationship between the processes of globalization and income inequality. Globalization is measured by the KOF globalization index. By the Granger causality test and through the correlation coefficients have been validated alleged links for both phenomena. The improvement of economic and mathematical methods and models allows us to refine the already obtained results of empirical studies of interdependencies and to obtain new results. But in the opinion of the authors, more in-depth studies in this area also require the development of schemes of action for the formation a list of economic policy measures using the identified relationships, depending on the goals the government.

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WORK-LIFE BALANCE AS A KEY FACTOR IN ACQUIRING AND RETAINING GLOBAL TALENT

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Abstract. Effectiveness of organizations depends on their employees. Employees are the most valuable source of the organization due to their knowledge, skills, and talent. Because of globalization, the workforce is becoming diverse, and employees have different needs. Hence attracting and retaining highly qualified and productive employees of sufficient quantity, that help organization to achieve its goals is very challenging. One of the reasons why employees leave their employers is the lack of work flexibility. Organizations need to take this fact into consideration and update HR policies that reflect this trend. The article provides better understanding of the significance of work-life balance in relation to employees' acquisition and retention. The main objective of this theoretical analysis is to recognize the latest trends in family-friendly policies and programs offered by the global companies, that establish new innovative ways of providing employees with the work-life balance and identify the potential effects of these programs on individual mechanisms, such as job satisfaction, motivation and stress that directly affect employees' commitment to the organization. A part of this research is to analyse challenges that organizations may face while implementing the concept and provide suggestions for overcoming them. The results of this research may help employers assist their employees in achieving and maintaining healthy work-life balance that can increase their satisfaction and productivity and reduce turnover.

Keywords: HR policies, work-life balance, flexibility, globalization, retention

JEL Classification: F62, F66, M54, J81

1. Introduction

The composition of the workforce is changing. More young women are employed, senior workers - the Boomers permanently leave labor market and enter retirement, and younger workers known as Generation Y, also called Millennials are becoming the main segment of the global workforce. Specialists predict that Millennials (born between 1981 – 1996) will comprise approximately 35%, Generation X (born between 1965 – 1980) approximately 35%, and the Boomers (born between 1946 – 1964) only 6% of the entire workforce around the world by 2020.

Millennials are not the only rapidly growing group of workers. While global companies find it difficult to understand and satisfy the needs of Generation X and Y, another new generation of workers known as Generation Z (born between 1996 and after) has entered the labor market. As seen in the graph, they will make up 24% of the global workforce in 2020.

Figure 1: Composition of the global workforce by 2020
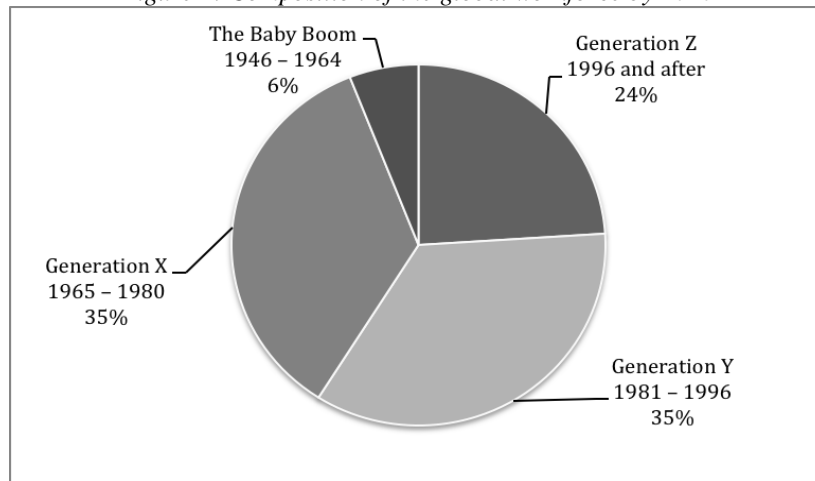
Source: (ManpowerGroup, 2016; Fry, 2018; EY[1],2015, A)

Due to the fact that each group of workers was born in different era and is affected by different external factors, their characteristics, preferences, expectations, priorities, and perception of how to get work done are different from one to another.

Latest study conducted by Deloitte[2] (2018) shows that workers from Generation Y and Z consider organizational culture and competitive salary as very attractive, however *diversity*, *workplace flexibility* and employer who encourages *professional development* and *offers trainings* are keys to their *loyalty* and *higher productivity*.

According to the global survey conducted by EY (2015, B), other than financial rewards, benefits and higher level of flexibility, full-time employees around the globe *find it hard to manage work and family duties.* As a result, 74% of Generation Y, 71% of Generation X, and 58% of Boomers (those who are parents) seek *paid parental leave*, onsite *childcare* or *telecommuting*.

While each generation of workers is different, they have one thing in common: the desire for workplace *flexibility*, to be able to maintain *balance between work and personal activities*.

Methodology

The purpose of this article is to review the literature and provide better understanding of the work-life balance and its impact on employees' acquisition and retention. The data are obtained mainly from online sources, documents, books and journals. All sources are analyzed according to the appropriate procedures. The theoretical analysis identifies family-friendly policies and programs that help employees eliminate the work-family conflict. Part of this research is to recognize potential effects of these programs on organizational attractiveness, job satisfaction, motivation and stress of employees that directly affect their performance and commitment to the organization. Challenges that the organizations may face while implementing the concept are identified and suggestions provided.

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[1] EY refers to the global organization, the member of Ernst & Young Global Limited.

[2] Deloitte refers to one or more Deloitte Touche Tohmatsu Limited, the global network of member firms.

2. Flexibility and work-life balance

Many global employers and governments realized that if they want to survive in this competitive environment, they have to find solutions for *flexibility* issues so that all employees will be able to work while also have enough energy to fulfil their family responsibilities and time for personal development or other activities.

What is *flexibility*? It is the ability to change or adjust to certain situation. (Bednarska-Wnuk, 2012) *Flexibility in the workplace* gives employees the autonomy to make decisions about where, when and how they work. It is the key part that enables employers to adjust to the needs of its employees and builds family-friendly organization that enhances the ***work-life balance.*** (Lewis & Lewis, 1996)

Finding one acceptable definition of *work-life balance* is difficult. It is irrational to say that work-life balance means spending the same amount of time for work-related duties and for personal activities. Generally, the concept describes the harmony that working people are trying to achieve and maintain by allocating the right time and effort between work and personal life. The perception of balance differs from one to another depending on certain aspects as age, gender, personality, marital, or parental status. (Meenakashi et al., 2013)

2.1 Work-life balance practices

The number of companies that choose flexible working environment rather than the traditional is increasing. (Bozkurt et al., 2017) Employers are embracing different types of policies, investing in programs that address the needs of employees, help them successfully cope with work-life challenges and foster their well-being. These programs make companies the best to work for.

The following table indicates the latest trends in family-friendly policies, flexible work options and other programs that are increasing in popularity.

Family-friendly policies are mainly oriented toward working parents and their dependants, though some take into consideration childless employees who wish to become parents. These policies enable employees to care for sick children or ill relatives by offering un/paid parental leave or by bringing them to work if necessary. (Bartel et al., 2017) In addition, some employers provide financial, nonfinancial, educational, or other work and non-work-related assistance to employees (mother or father) returning back to work after the arrival of new born. (Lucia-Casademunt et al., 2018)

Flexible work options or flexible work arrangements provide wide range of employment possibilities that are relevant to both, employers and employees. While employer can increase agility (Spreitzer et al., 2017), employees can experience flexibility in terms of employment relationship, length of workweek, breaks, shifts and work schedule adjustment, or dress code. Furthermore, smart technologies have created time and location independent workplaces what results in a situation when employees, to certain extend, have freedom to accomplish their tasks far away from their offices. (Nijp et al., 2016) On the contrary, technology needs to be used wisely and with caution, otherwise it may lead to serious mental and physical health problems such as exhaustion and burnout. (Primecz et al., 2016)

Table 1: Work-life balance policies

Family-friendly policies	
• Dependent care flexible spending account • Spousal benefits, excluding health care coverage • Onsite lactation/mother's room • Fertility and adoption assistance • Bring child to work in emergency • Lactation support services (education and consulting) • Foster care assistance • Access to backup child care services • Onsite vaccinations for children • Subsidized/Nonsubsidized child care centre	• Breast milk shipping while on business travel • Subsidize child care program • Onsite parenting seminars • Babies at work • Programs for parents returning back to work (after childbirth) • Parental leave (mother/father) • Maternity leave • Elder care referral services • On-ramping programs for family members dealing with elder care responsibilities • Access to backup eldercare services
Flexible work options	
• Telecommuting (on full-time, part-time or ad-hoc basis) • Compressed work week • Four-day work week of 32 hours or less per week • Job sharing • Flex time • Mealtime flex	• Shifts flexibility • Alternative location arrangements • Seasonal scheduling • Break arrangements • Un/Paid sabbaticals • Results-only work environment (ROWE) • Casual dress (once a week, every day, seasonal)
Other employee programs	
• Break room • Free coffee, snack, and beverages • Legal services • Postal services • Dry cleaning services • Language classes • Educational classes	• Pets at work • Annual company outing • Community volunteer programs • Organization-sponsored sports teams • Sport games tickets • Electric vehicle charging station

Source: (SHRM, 2018)

Other employee programs promote social interaction through participation on social or family-oriented events, sport or entertainment activities, or provide volunteering opportunities during work time what influence social and emotional well-being. They are also designed to assist employees with wide range of legal, educational, personal, or physical concerns. Welcoming animals in the workplace is another trend among pet-friendly employers. Incorporating this policy has a positive impact on employee engagement and retention. (Wilkin et al., 2016)

3. Work-life balance as a strategic tool

On-going process of globalization, new forms of international mobility, and increased number of global competitors create the need for nuanced approaches to talent management. (Farndale et al., 2010) Flexibility is essential for employees, yet they are not the only ones who can take an advantage of it. Balanced employees' lifestyle and healthy work environment can be used as a strategic tool to create positive employer branding and enhance ability to

acquire and retain motivated, satisfied, and competent employees what leads to organizational utility.

Organizational attractiveness and acquisition of employees

It is in the best interest of the company to hire well skilled and outperforming employees. Unfortunately, work choices and organizational attractiveness depend on applicant's preferences. However, vision of flexible leave policies, independent work, and accessibility to onsite childcare or eldercare are appealing to all generations of workers. In the Randstad[3] Employer Brand Global Report (2018), work-life balance is the third most important factor rated to have a positive effect on attractiveness of the organization. Hence, the number of employers that gain reputation for encouraging work-life balance can improve their public image and chances to attract greater pool of applicants and fill the position with the right employees are increasing.

Individual factors: Satisfaction, motivation and stress

Since majority of the working population spend more of their time at work than at home, it is an ethical responsibility of every employer to ensure their well-being. De Neve and Ward (2017) stated in their report that work-life balance is perhaps the strongest driver of subjective well-being in the workplace. On top of that, the theory of organizational behavior explains that autonomy and employers' support are the two of job characteristics that are the key indicators of job satisfaction what contributes to the well-being of employees. (Colquit et al., 2017) Thus, employer that gives employees the sense of autonomy by bringing more flexibility into their working lives and shows empathy toward employees' family demands is more likely to have happy and satisfied employees. Since employees' motivation depends on their ability to satisfy their needs, the level of their motivation may increase as a consequence.

Family or personal problems, childcare or elderly care problems, financial or legal problems, working under pressure or dedicating too much time to work may lead to serious health-related problems such as difficulty to concentrate, stress, depression, or burnout. As a result, employees may engage in counterproductive behavior, increase number of mistakes and abuse sick time. This reflects on decreased job satisfaction and employees' productivity and presents a serious threat to the business success. (Atheya & Arora, 2014) Family-friendly policies and non-traditional work patterns are some of the future actions that may help employers to create happy and healthy workplace, reduce stress and prevent burnout.

Individual factors vs. performance and commitment

Level of satisfaction, motivation, and stress are interrelated and determine job performance and commitment of employees toward the organization. Satisfied and motivated employees are more likely to stay productive and loyal (Rožman et al., 2017), however, employees that experience stress in the workplace are less committed toward the organization. (Abdelmoteleb, 2018)

The current literature indicates that work-life balance is a powerful strategic tool for improvement of organizational effectiveness. Increased productivity, enhanced organization image, and reduced cost associated with absenteeism or replacement (recruitment, selection,

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[3] Randstad is the global leader in the HR services industry.

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and training) of employees that decided to leave are all positive outcomes linked with the work-life balance practices.

3.1 Challenges and recommendations for employers

It is clear that work-life balance strategies have real value to the organizational success in the process of hiring and retaining global talent, and yet some employers find it difficult to formulate them properly, apply them effectively, and make it possible for employees to achieve desired balance. The following are the most common challenges faced by employers:

- Lack of preparation and rapid change in the organization.
- Work-life balance programs do not align with the current or potential employees' preferences.
- Employees' lack knowledge about work-life balance opportunities offered by their employers.
- Difficulty of monitoring and evaluating employees' performance.

To create supportive work-life balance culture, it requires to modify current strategies and management philosophy and move from outcome orientated to people oriented culture where in the center of attention is not profit but employees' well-being. Such organizational change should be established through a step-by-step process which involves planning, assessment of current and future resources, and formulation of relevant strategies that are aligned with organizational mission. Rapid organizational change may have an adverse impact on business results. The theory suggests that by involving employees in the change process resistance can be avoided and the whole process accelerated. (Hussain et al., 2018) Employees' surveys, meetings or a simple interview can assist employers in administering more personalized benefits and compensation packages that address the needs of a variety of generations.

Policy implementation is as important as its adoption since it influences the perception employees or applicants have about the policy. Employers, supervisors, managers, and recruiters play a fundamental role in the entire process. They are the facilitators who need to make certain that employees or applicants are informed about the programs that company offers and understand the conditions under which they can be used. The crucial step is to provide training sessions, use e-learning programs, or offer other informational materials that increase their knowledge of benefits. (Laharnar et al., 2013)

Even though it takes a consistent preparation and successful implementation, proper measurement of outcomes and their comparison with targeted results are important in order to identify the effectiveness of these policies. Monitoring and evaluating employees' performance may require a change in establishment of performance standards (for instance, focusing on meeting deadlines and quality of work rather than counting working hours) and use of unique methods of evaluation. Building trust among employees will be fundamental in this case.

Discussion

The primary purpose of this study was to examine and understand different aspects of work-life balance policies, reveal their benefits in relation to employees' productivity, commitment and competitiveness of the organization. It is certain that the importance of work-life balance is high. The study has shown that work-life balance helps organizations to be more attractive, effective, reduce turnover, and renew employees' enthusiasm, but there is

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no comparison of these effects in a long or short-term run. On top of that, not all work-life balance policies and programs are suitable for every business. It depends on the nature of the industry, organization, and nature of the job. The further research should investigate these issues in greater depth.

4. Conclusion

Organizations competing for the best global talent have multiple techniques to attract and retain the targeted global talent and stay competitive. It is unfortunate that not all organizations use work-life balance as a powerful tool in this new era where job seekers expect organizations to offer more than just a salary. Recent research findings showcase that work-life balance practices provide employees with much valued flexibility what leads to a win-win situation for employees and employers.

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GLOBALIZATION AND INEQUALITY IN SOCIETY

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Abstract. The modern stage of development of international economic relations is globalization, which is an increasing degree of integration of national factor markets into a single global market, into a single global space. Globalization, by making the national economy open to the free movement of all types of resources and vulnerable, is a rather controversial process. The acceleration of commodity-money relations and the increase in the scale of capital overflow, on the one hand, conceals the potential of economic growth and serves as its additional factor, on the other – increases the risk factors and uncertainties, creates serious threats to national interests. There is an acute contradiction between globalization and the national interests of many States. Threats to national security arise from the different levels of economic, social and political development of countries, which increasingly widens the gaps between rich and poor countries. The initial inequality in the technological development of countries determines the further redistribution of benefits in favour of transnational corporations of developed countries. In assessing the immediate prospects of globalization, the following can be noted: the absence of supranational regulators of globalization can cause further aggravation of the long-term development of the world economy; the current trend in the near future may be the regionalization of economies and the development of protectionist measures; globalization is accompanied by increased instability of the world economy and the deepening of its uneven development.

Keywords: globalization, uneven development, national interests

JEL Classification: F02, F11, F52, F62, F63

1. Introduction

The modern stage of development of international economic relations is globalization, an increasing degree of integration of national factor markets into a single world market, into a single global space. (Levitt, 1983)

Despite the ambiguity of the definition of the category "globalization" in modern economic theory (Novy, 2015), most authors agree that it carries not only a positive potential for the

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world community, but also increases the risks and threats to its development (Soltes & Stofko, 2015). One of the negative results of globalization is the growing processes of uneven development, the dominance of developed countries and their largest companies to the detriment of national interests. (Kliestik et al., 2018) The problem of globalization is that governments act in favour of profits and the interests of a few. (Altunyan & Kotcofana, 2016)

Globalization, by making the national economy open to the free movement of all types of resources and vulnerable, is a rather controversial process. (Venables, 2018; Duernecker & Vega-Redondo, 2018)

On the one hand, the acceleration of commodity-money relations due to specialization and the increase in the scale of capital overflow opens up additional opportunities for countries to enter new and wider markets around the world, what contributes to the growth of production efficiency and economic growth, on the other hand, risk factors and uncertainties increase, serious threats to national interests are created. (Setek & Petrach, 2017) An acute contradiction between globalization and the national interests of many governments appeares.

At the end of the XIX. century, England, as an economically developed country, actively promoted as a new economic theory the idea of economic liberalism, developed by Adam Smith and David Ricardo, which is based on the idea of free trade and beneficial exchange. It was an attempt by England as an industrialized country to retain the monopoly of the leading power by itself. (Acemoglu & Robinson, 2012) At that time, England was a leading country in the range of knowledge and industrial development. If you follow the idea of Ricardo, the developed countries that have established mass production, due to the effect of scale and comparative advantage will retain leadership and will be richer than the countries lagging in economic development, which will consolidate the role of producers of raw materials.

Based on these principles, in the context of globalization, the world is still divided into industrialized countries, whose advantage is in knowledge and financial capital, and lagging behind, forever catching up countries whose capital is ignorance and poverty.

Now we are gradually seeing a trend when "society turns into a ladder in which the Central steps are rotten, in such a society there is a place either for the very rich or for the very poor". (Reinert, 2009; Madudova, 2017) This trend can be observed not only within each country, but also between governments. Uneven growth and growing social inequality appears between countries due to increased export specialization, which leads to lower income in these countries, while in industrialized countries this leads to increase of income and at the same time to the formation of imperfect competition. (Horner et al., 2018)

2. Globalization and inequality in society

In the 1990s, the countries of Eastern Europe and Latin America were forced to go their way to free trade by the advice of the ideologists of the "Washington consensus" through shock therapy, the destruction of their own industrial potential, the deindustrialization of the economy. But as time has shown, as long as the country has a weak industrial sector, the transition to a free trade regime in the context of globalization is premature.

Growing inequality leads to economic turbulence. So John. Stiglitz notes in his book "The price of inequality", that financial markets do not pursue the goal of developing the entire economy. (Stiglitz, 2012)

They are subjected to the ideology of "capital market liberalization", which promotes the export of capital and the regime of global governance. One of its main messages is that the economy and society will only benefit from reduced inequality and increased equality of opportunity. Economic policy is the reflection and realization of economic interests of certain groups or sectors of the economy. (Mikhailov et al., 2016).

The high level of social inequality in society is the result of the adoption of appropriate laws and political decisions. Therefore, each new policy strategy must be adopted in view of their impact on inequality. (Antras et al., 2017) In the context of globalization, corporations from developed countries export capital and technology to developing countries with lower production costs and import cheap goods and high profits. (Volkova et al., 2017)

But as a result, employment in developed countries may be reduced, which may accordingly cause negative sentiment in the majority of the population. This may lead to an increase in the quantitative measure of GNP, but will not affect the overall well-being of ordinary citizens. In this regard, the policy of globalization based on the idea of free trade is beneficial to transnational corporations of industrialized countries. The free trade regime in the context of globalization serves the interests of corporations, but not the interests of society and ordinary citizens.

New President Donald Trump, having made the" November " revolution in politics, promotes the idea of re-industrialization of the country. In relation to major global manufacturers the EU, Canada and China, which supply their products to the rich American market, high customs are imposed duties, citing a threat to national security. (Vu, 2018; Stiglitz, 2018; Ghemawat, 2017) As a symmetrical response, the European Commission adopted the decision on the introduction of response customs on some U.S.A. goods.

The growth of protectionist measures has become a form of self-protection of national markets against the global market element. This was also during the global financial crisis of 2008. Thus, according to the world Bank study, 17 of the 20 countries of G20 countries adopted more than 47 protectionist measures that limited the size of international trade. A third of these measures were made to increase import tariffs to protect domestic producers. (Lyakin & Rogov, 2017)

Against the background of the constant growth of the world economy in recent years, many countries have unilaterally reduced their import customs. Of course, in the long term, protectionist measures can turn into trade wars, and are unprofitable for the world economy, but in the short term, the use of such tactics can be justified to some extent. (Van Neuss, 2018)

Although protectionism may contain the risk of a repetition of the situation which was observed during the great depression of the 1930s. Then it all started with the law of Smoot-Hawley, which established high customs duties for a number of goods. Its main goal was to reduce imports and stimulate the growth of the domestic economy. The result was a response from other countries, which led to a sharp drop in exports between the USA and European countries.

Having ceded China the role of a leader in the global manufacturing sector, the United States lost a significant part of its industrial potential. Trump's main demand for China was to reduce the trade deficit by $ 200 billion by the end of 2020 from the current $ 375.7 billion. Without the threat of a trade war, China not only would not reduce the trade deficit with the

US, but would not even go to negotiations on this topic. (Wang et al., 2018; Kato & Okubo, 2018)

In the real sector of the US economy there are significant problems: high level of public debt, weak purchasing power of the population with low competitiveness of the industrial sector. The solution to these problems can be either reducing real incomes or taking protectionist measures, which is what the US government is resorting to. (Neuman. 2017) Economic policy stimulated production abroad at the expense of cheap labor, then to enter the domestic market. As a result, transnational corporations were enriched and workers ' incomes were reduced. American workers understand that they have to compete with foreign workers, and therefore lose their positions in defending a decent salary level. (Stiglitz, 2015)

3. Conclusion

Threats to national security arise from the different levels of economic, social and political development of countries, which are increasingly widening the gaps between rich and poor countries and also inside rich countries. The initial inequality in the technological development of countries determines the further redistribution of benefits in favor of transnational corporations of developed countries. (Coulibaly et al., 2018) Although many countries have varying degrees of winning, if they are ready to effectively take advantage of the opportunities provided. However, globalization is accompanied by increased instability of the economy and the deepening of uneven development. (Pavlova & Paliy, 2017; Xia & Song, 2017, Dunford & Liu, 2017)

The initial inequality in the technological development of countries determines the further redistribution of benefits in favor of developed countries. "Globalization expands and strengthens its own national advantages." In relation to other governments, " the beneficial process of globalization is gradually depriving particular governments of their sacred sovereignty". (Zhulega et al., 2017)

The openness of state borders in the context of limited resources allows, first of all, large corporations to use these resources freely and make huge profits. Capital is directed to where it is more profitable and easier to provide production, where labor and other resources are cheaper. The UNO has published a special paper called "Globalization with a human face", in which the contrast between developed and developing countries, as globalization progresses, looks like this. If in the 60th year the gap between the five richest and five poorest countries was 30:1, in the 80th it became- 50:1, and in the 90th - 74:1. The model of globalization is aimed at extracting the greatest benefits from the accelerated development of the world economy for highly developed countries without regarding the interests of other goverments.

However, the degree of market integration varies. Due to the lower degree of involvement of different types of services in the international turnover, the market of services is less susceptible to globalization processes. The capital market is more globalized because of low flow and large volumes. The world currency market is already serving capital-related transactions more and more than just foreign trade. This makes it possible to distinguish the financial aspect of globalization as a basic aspect. Financial globalization because of the use of modern information technology, liberalization and removal of the goverment from control over financial markets and international capital flows, on the one hand, leads to a significant increase in financial flows in the world currency market and reduces the difference between

interest rates, on the other hand, freely and unpredictably moving between countries and regions of the world, increases the uneven distribution of financial resources. The migration of short-term speculative capital in financial markets can not only fill, but also suddenly create an acute shortage of financial resources, leading to the elimination of national markets. The absence of supranational regulators of globalization causes further aggravation of processes. As a result of the globalization of financial markets, their real volumes become uncontrolled and are not subject to accurate measurement. Frequent crisises in many countries in recent decades has cast doubt on the stability of the financial system and the positive prospects of globalization. (Zagora-Jonsta, 2017)

The financial sector enslaves society and subordinates the whole economy to its logic, and because of this, it ceases to play its role and contribute to social welfare. (Shen, 2017) The financial sector has become alien to the spirit of business. It does not perform the function of optimal placement of capital and risks and contributes to the further development of "casino Finance". The financial sector instead of serving people, subdues them. For large banks and speculative funds, the satisfaction of private interests is increasingly contrary to the common good and interests of the economy. The financialization of the economy as characterising of modern globalization, contraries to the principles of liberalism.

Supporters of globalization and free trade, based on the theory of comparative advantage of D. Ricardo, and now on the theory of the "Washington consensus" pursue a policy of domination of developed countries to the detriment of national interests of less developed. The neoliberal theory of trade had led to the deindustrialization of the less developed countries and had not helped them escape poverty. In an unregulated market, not only spontaneous order but also spontaneous chaos may appear. This leads to the idea that economic policy can no longer be determined solely by the principles of neoclassical economic theory. In the long term, economic policy and the welfare state are two sides of the same medal. The welfare state is a kind of compromise between the market economy and the planned one. (Altunyan et al., 2017) The real sector of the economy must save the modern world from the financial crisis. During the ideological recession, the production system was destroyed. Countries whose economies are rated low by the world Bank have virtually no industrial production. (Voskerichyan & Norboeva, 2017)

Thus, assessing the immediate prospects of globalization processes, we can note the following: globalization is accompanied by increased instability of the world economy and the deepening of its uneven development, the lack of supranational regulators of globalization. In this regard, the current trend in the near future may be the regionalization of economies with the shift of the center towards the protection of national interests, on a regional and geopolitical basis. The era of globalization is being replaced by deglobalization.

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GLOBALIZATION AND BETTER LIVE INDEX LEVEL IN V4 COUNTRIES

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Abstract. The changes and challenges in the society that we associate with globalization are directly connected with the development processes of technologies through which people today have greater accessibility to education, to information and fast spreading information leads to faster transfer knowledge, innovation and faster experiencing our lives. This also leads to the customer that is more informed and is more sophisticated in selection of the specific product. The customer in the global world requires information about the product, design, the distribution ways, and system of selling the product, customization, and overall marketing used. Accessibility information leads also to the customer preferences changes. OECD published information on the better life index level in several countries including V4 countries. The contribution deals with the similarities as well as differences between V4 countries. Better standard of living leads probably to better creativity, into the decreasing of the criminality, to obtain better jobs, better control over the corruption, less negative externalities, and overall economy growth. In order to create this environment and fulfilments, the healthy ecosystem and properly connected knowledge should be created.

Keywords: standard of living, better-life index, V4 countries

JEL Classification: F44, F63, J24, O32, O35

1. Introduction

Changes in the world economy brought about by technology changes, innovations, the development of new platforms and the application of new business models are linked to the growth of the openness and independence of national economies. It is also possible to record the trend in innovation and technology directed to the improvement of living conditions and standard of living including new activities and experiences. Accelerating the availability of new ideas and means of communication allow for closer contacts and cooperation between innovators, regardless of their physical location. (Prahalad & Krishnan, 2008) The claimed predominance of happiness should be substantially reformulated by the results of

In the globally interconnected economy, however, each country has its comparative advantages. The right question is what and where are those comparative advantages? Some

countries rich for fossil fuels (it is comparative advantage) on other hand they invest into the future potentials such knowledge, education, innovation, R&D and etc. The question is what if country has no valuable sources? Maybe these countries are pushed to produce more quality outputs if we are talking about better standard of living. These countries have to produce more innovations, better quality services, better environmental areas, patents as valuable etc. (Greenhalgh, 2010; Markkula, 2014) Then can be transferred then into global market. If the country wants to have better quality in standard of living then the comparative advantages have to be carefully assessed. They should consider, evaluate and improve innovation system, educational system, services such knowledge-intensive business-services. In order to achieve better environment and better standard of living the innovation takes an important role too. The countries with lack of valuable sources are in the position of pushing innovations, R&D into sustainable growth in order to achieve the better quality living. On other hand they don't only produce its innovation for its economy and country, but they contribute with their innovations the global market and better environment.

Digital technologies are rapidly changing business practices and companies, institutions or processes. They are now an integral part of the economy, part of key innovations, but also the essence and carrier of the great economic paradoxes of our time. Rapid advancements in technology create unforeseen benefits and at the same time evokes challenge in consumption, distribution, allocation of factors of production, efficiency and assessment effectiveness as well as in the level of standard living or in the perception of well-being. The claimed predominance of happiness should be substantially reformulated by the Ponocny et al. (2016). At the same time, the differences between countries or regions are growing. (Rehak et al., 2013; Smith et al., 2014; Podobnik et al., 2012) The paper deals with the level of competitiveness of the Visegrad countries (OECD 2017; OECD 2016; OECD 2015; OECD 2014; OECD 2013; Buno et al., 2015) and the level of better-life index.

2. Competitiveness of V4 countries

For compare of individual countries we have to indicate their living standard, economic development or growth indexes connected to gross domestic product and innovation index. The proportion between index of innovation inputs and outputs expresses the effectiveness. Global innovation index is evaluated by OECD (OECD 2017; OECD 2016; OECD 2015; OECD 2014; OECD 2013), within 141 countries in the world (OECD, 2015). In our contribution we compare the selected countries, which were previously referred to as transition economies and are members of the EU since 2004. The V4 countries or Visegrad countries (e.g. Czech Republic, Hungary, Poland, and Slovak Republic) represent regional entity. The individual data related to the competitiveness and innovation in countries is based on the OECD statistics.

Table 1 shows the global innovation index in 2013 and 2017 including some sub-indices related to better-life index in V4 countries. By the global innovation index is on the first place the Czech Republic followed by Slovakia and Hungary. But in this period, Hungary, by GII, dropped by 8, Czechoslovakia moved by 4, Slovakia by 2 and Poland even by 11 points higher. In the assessment of political stability as an important aspect of the country's living standards, however, the positive shift in the evaluation was recorded by Slovakia and Hungary, in contrast to the Czech Republic where there was a decrease of 4 places and Poland, which even dropped by 10 places.

Table 1. Comparing V4 countries by indicators of Global innovation index in 2013 and 2017

Country	Index	2013	rank	2017	rank
Czech Republic	GII Global Innovation Index	48.4	28	51.0	24
	IO Innovation Output Sub-Index	43.3	26	46.2	16
	II Innovation Input Sub-Index	53.4	27	55.7	27
	Institutions	76.1	31	77.6	30
	Political stability and safety	93.5	14	87.1	18
	Human capital and research	45.7	30	47.6	30
	Expenditure on education, %GDP	4.1	68	4.1	78
	Gov´t expenditures/pupil, secondary, %GDP/cap.	22.1	45	23.7	36
	School life expectancy, years	15.8	22	16.8	17
	PISA scale in reading, math and science	490.5	26	490.8	28
	Pupil-teacher ratio, secondary	11.0	34	11.5	37
Hungary	GII Global Innovation Index	46.9	31	41.7	39
	IO Innovation Output Sub-Index	45.4	23	35.1	37
	II Innovation Input Sub-Index	48.5	36	48.4	41
	Institutions	73.5	38	70.7	40
	Political stability and safety	84.5	32	81.6	29
	Human capital and research	40.2	37	39.5	42
	Expenditure on education, %GDP	4.9	44	4.2	73
	Gov´t expenditures/pupil, secondary, %GDP/cap.	24.7	30	16.2	72
	School life expectancy, years	15.5	30	15.4	38
	PISA scale in reading, math and science	495.7	24	474.4	36
	Pupil-teacher ratio, secondary	10.2	29	10.3	27
Poland	GII Global Innovation Index	40.1	49	42.0	38
	IO Innovation Output Sub-Index	32.4	64	33.8	41
	II Innovation Input Sub-Index	47.8	39	50.2	37
	Institutions	74.4	35	75.6	33
	Political stability and safety	92.8	16	85.0	26
	Human capital and research	37.6	45	36.5	48
	Expenditure on education, %GDP	5.0	42	4.9	55
	Gov´t expenditures/pupil, secondary, %GDP/cap.	23.3	40	22.1	45
	School life expectancy, years	15.4	31	16.4	25
	PISA scale in reading, math and science	501.1	15	503.9	17
	Pupil-teacher ratio, secondary	10.4	30	9.5	20
Slovak Republic	GII Global Innovation Index	42.2	36	43.4	34
	IO Innovation Output Sub-Index	36.2	45	37.2	35
	II Innovation Input Sub-Index	48.3	37	49.7	39
	Institutions	77.4	27	74.5	34
	Political stability and safety	89.8	22	87.0	19
	Human capital and research	39.5	41	34.4	53
	Expenditure on education, %GDP	4.1	73	4.1	79
	Gov´t expenditures/pupil, secondary, %GDP/cap.	19.0	62	19.7	53
	School life expectancy, years	14.7	41	15.0	49
	PISA scale in reading, math and science	488.1	28	462.8	41
	Pupil-teacher ratio, secondary	12.0	42	11.1	32

Source: Global innovation index 2013, 2017 (OECD 2017; OECD 2016; OECD 2015; OECD 2014; OECD 2013)

However, all countries experienced a significant drop in their expenditures on education in the GDP in 2013-2017. The governments' expenditures on the pupil are growing in Czech Republic and Slovakia, light decreasing in the Poland and dramatically decreased in Hungary. In relation to expenditures on the pupil, it is interesting to note that in PISA results a small increase is recorded in Poland, the stable situation in the Czech Republic and in Hungary and Slovakia there was a decrease. It's important to say that knowledge workers as well as in research and development expenditures as the indicators in GII the Czech Republic has taken the first place, where Hungary, Poland and Slovakia follows in order the rest scores.

3. Better life index level in V4 countries

For the indicating and evaluating the well-being in the different countries is possible to use several indices. (Chaaban et al., 2016; Yang et al., 2013; Akan & Selam, 2018; Durand, 2015) We choose the better life index because it is less sensitive to income effects than Human Development Index. (Chaaban et al., 2016) The better life index includes more dimensions of life balance and life conditions express by quantitative and qualitative indicators. (Stofkova & Stofko, 2016; Durand, 2015) The partial indicators are devoted to explain or describe the state of life conditions in countries as well as the perception of these conditions. Index deals with 11 areas connected to the life condition described by 20 indicators (see table 2).

Table 2 Changes and differences of partial indices of better life index in V4 countries in 2013-2017 years

Indicator		CZ difference 2017-2013	H difference 2017-2013	PL difference 2017-2013	SK difference 2017-2013
Housing	Dwellings without basic facilities	-0,1	-0,4	-1,3	0
	Housing expenditure	-1	-2	-1	-1
	Rooms per person	0	0,2	0,1	-0,1
Income	Household net adjusted disposable income	4146	2963	3535	3583
	Household net financial wealth	9509	10899	5775	3048
Jobs	Long-term unemployment rate	-1,09	-2,94	-0,91	-3,19
	Personal earnings	4410	2274	6115	4173
Community	Quality of support network	0	-6	-2	2
Education	Educational attainment	1	2	2	1
	Student skills	1	-22	3	-25
	Years in education	-0,5	-0,9	-0,5	-0,5
Environment	Air pollution	3	4	-12	9
	Water quality	3	0	1	1
Civic engagement	Voter turnout	-4	15	0	1
Health	Life expectancy	0,7	0,7	0,7	0,6
	Self-reported health	2	1	1	4
Life Satisfaction	Life Satisfaction	0,3	0,6	0,1	0,2
Safety	Homicide rate	-0,9	-0,1	-0,3	-0,7
Work-Life Balance	Employees working very long hours	-1,81	-0,05	-0,56	-1,34
	Time devoted to leisure and personal care	0,72	0,16	0,22	0,23

Source: OECD, Data extracted on 29 Mar 2018 09:50 UTC (GMT) from OECD Stat (OECD)

The differences among the V4 countries indicate that the changes of the state of life conditions are significant. The same direction +/- are in 11 indices, the tendencies in 9 indices are different. There are caused, in particular, by demographic and social influences, in particular by the decline in natality, the changes in employment and the market conjuncture.

4. Comparison of better life index level in V4 countries

The classification of the OECD countries according to their well-being scores states all V4 countries in the 3th cluster. (Peiro-Palomino & Picazo-Tadeo, 2018). By Table 3 the similarities among V4 countries are concentrated in the four topics. At the rank from 1st to 4th the 4 topics there are, e.g. health, life-satisfaction, education and safety. By Balestra, et al. (2018) the health, education and life satisfaction are the topics that matter the most to users in OECD countries. The safety dimension is more important in the two of V4 countries (Poland and Slovakia). No differences are at the 10th and 11th ranks, e.g. community and civic engagement. More differences exist among five topics: environment, jobs, income, work-life balance and housing. Minimum differences show the evaluation better life index between Czech and Slovak republic. There are only 2 differences. The environment and jobs are less important as work-life balance in Hungary and Poland.

According to OECD the better life index the best countries for living are countries from Europe as Sweden, Norway, Switzerland, and Denmark.

Table 3 Comparison of well-being across V4 countries by better life index of OECD

Topic	CZ		H		PL		SK	
Health	10,27	1.	9,78	3.	9,72	3.	10,23	1.
Life satisfaction	10,24	2.	10,49	1.	10,83	1.	10,16	2.
Education	9,78	3.	9,61	4.	9,84	2.	9,51	4.
Safety	9,73	4.	9,86	2.	9,60	4.	9,54	3.
Environment	9,37	5.	9,18	7.	8,56	9.	9,16	5.
Jobs	9,16	6.	8,36	9.	8,97	7.	9,03	6.
Income	9,08	7.	8,76	8.	9,34	6.	8,68	8.
Work-life balance	8,94	8.	9,32	5.	9,35	5.	8,86	7.
Housing	8,20	9.	9,25	6.	8,95	8.	8,37	9.
Community	7,50	10.	8,34	10.	7,67	10.	8,02	10.
Civic engagement	6,76	11.	6,21	11.	5,93	11.	6,59	11.

Source: OECD, June 2017(OECD, The better life index)

5. Conclusion

We are facing new tendencies and evolution in innovation, which is an important factor in economy growth and better standard of living. We can mention that innovation are not replacing jobs by using high-technology, but its replacing risk jobs and employees which are less reliable on the type of job. On other hand more knowledge workers are needed for innovation and sophisticated market, which includes all kind of services as well as knowledge-intensive business-services. This also leads in growth in the knowledge of customer and therefore customer is more sophisticated in selection of the specific product, which doesn't fulfil the basic needs anymore. The customer also would like to be better

informed about the product, design, the type of distribution, system of selling the product, customization, and overall marketing used.

Better standard of living leads to better creativity, leads to obtain better jobs, less negative externalities, and overall economy growth. In order to create this environment and fulfilments, the healthy ecosystem and properly connected knowledge should be created. The identification of differences in the tendencies of indicators of better-life index as well as the direction and scale of these differences allows us to explore and then take action to improve the state and level of the areas of life. Examining local changes in the V4 region in terms of competitiveness and innovation on the one hand, and living conditions on the other, makes it possible to perceive the impacts of globalization, technological and social change in individual countries.

Acknowledgment

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ASSESSING THE SOCIAL IMPACT OF PUBLIC INVESTMENT

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Abstract. In the current context of globalization and permanent change, public investment is the mainstay of economic development, based on which the progress and the quality of life can be ensured both individually and at the level of organizations and communities. The performance of a public investment strategy is assessed in terms of how it integrates the economic, social and environmental priorities at local, regional, national and international levels with the interests and needs of community members. The impact generated by public investment programs can be analyzed from at least two perspectives. Thus, on the one hand, they analyze the way in which they contributed to the development of the field of activity and on the other hand, if they had positive or negative effects, difficult to anticipate, on the beneficiaries of the programs, respectively the community involved. Impact assessment has become an essential concern in theoretical and applied global research, with emphasis being placed on the social component of an investment project. These research directions are motivated by the fact that the public services must be oriented towards the satisfaction of the community members. This research is dedicated to the analysis of alternatives assessment of the social impact on the public investment, in order to increase their level of performance and align with international standards. The results obtained can be a supporting element for public decision makers who, based on a system of unlimited needs and a limited investment volume, must choose the most successful projects.

Keywords: public investments, performance, social impact, community members

JEL Classification: H11, H43, R51

1. Introduction

In the recent decades, the issue of sustainable development and social impact has been intensively discussed in the specialized literature, such concepts being recognized and integrated in the public policy at the European and the world level. The concept of sustainable development, launched since 1997, has made significant progress over the years from a strategic and operational point of view, being an objective applied within the EU Strategy for Sustainable Development. (Romanian Government - Ministry of Environment and Sustainable Development - National Center for Sustainable Development, 2008) On the basis of this strategy, the 2013 – 2020 - 2030 National Strategy for Sustainable Development has been elaborated at a national level, which is a major benchmark for the design and implementation of the principles of sustainable development within the public and private organizations. The notion of sustainable development integrates new values in terms of the community's members and needs, which are elements of major importance in the forecast of

the future towards a new dimension integrating the economic, social and environmental progress. In the Report "Our Common Future", also known as the Brundtland Report, the World Commission on Environment and Development defines sustainable development as a development based on meeting today's needs without compromising the chance of the future generations to meet their own needs. (WCEB, 1987) The starting point of this concept is an integrated approach of decision-making and policy factors developed because of the harmonization of the economic growth level with the environmental protection. For example: there is little evidence to test the policy assumption that public strategies contribute to health improvement and reduce social inequalities in health. (Egan et al., 2010)

2. Social impact of public investment

The sustainable development perspectives are complex, global and multidimensional-oriented in addressing social, public health, social exclusion and poverty issues, natural resource shortages due to the inappropriate use thereof, and permanent environmental and economic changes.

The quality and particularities of the social climate are the benchmarks for managing the problems between the public institutions and other stakeholders. The current environment of interaction among the members of the community are influenced by a low-level trust in the public institutions, which discourages the development of their own values, mostly the involvement at the community level. With a strong impact on the sustainable development, the social climate must be participatory, so as the citizens can contribute to a proper progress of the local activities by developing their personal aptitudes and therefore, the development of the whole community. A participatory behavior in the social life should be encouraged and supported by an increased confidence in the local and central public institutions, through the interest shown for the citizens and the way of solving their necessities, by promoting certain examples of good practice as for the interactions with and the solution for similar difficult situations. Public authorities are aware of the importance of social impact of their projects. As a result, they developed wind farms in such a way that minimises the total social costs of the investment and which maximises its net benefits. (Begona & Hanley, 2002)

Recent studies show that public investment is more negatively affected by fiscal austerity than public spending on pensions and unemployment. (Breunig & Busemeyer, 2012)

The solution to improve the social climate consists in a sustainable progress of the economic status measured by the people's increased well-being and a decreased inefficiency of the public resources management. Furthermore, these days, "Aspects of globalisation are jeopardising health by eroding social and environmental conditions, exacerbating the rich-poor gap, and disseminating consumerism". (McMichael & Beaglehole, 2000)

Measuring the social impact involves measuring the long-term social change and the details of this change from the perspective of the social problem, the activities carried out and the short medium term results of these activities. (Keyte and Ridout, 2016)

The social dimension and the impact thereto have become the priorities of the public authorities, at least for the following reasons: it ensures an institutional credibility at the level of the partnerships; it may contribute to a continuous improvement of the actions and

provided services, and may distinguish from other similar organizations. (Meldrum et al., 2016)

Consequently, in order to find out if a public programme benefits society as a whole, additional effects have to be considered, such as the number of new jobs generated and the impact on the public budget. The cost is deducted from these social benefits and if the net social benefit is positive, then it is a reasonable investment of public funds. (Kuckshinrichs et al., 2010)

The essential conditions to be ensured by the public institutions, to which all citizens should have access, should avoid an inappropriate use of material, human, financial, and technological resources, should provide social protection services and assume its responsibility in the social areas, such as child protection, employment, higher education. Through a free access to and a transparent process of the foregoing conditions, the beneficiaries need to be stimulated to interact with the responsible institutions, thereby ensuring an increased level of trust and connectivity between such entities.

Failure by the public institutions to solve the above problems had a negative impact on the social environment and the environment, with certain consequences occurring in the form of unsustainable medium- and long- term programs and projects.

The implementation of the principles of sustainable development may also be assessed from a perspective of a socially generated impact and the way of diminishing, even eliminating the social issues within a reasonable timeframe.

The assessment of the social impact on the public policies in Romania is carried out differently from other economically, demographically and territorially comparable countries of the European Union. The gap, in terms of the usage methodologies and results against other countries is also justified by the fact that the public administration's vision is addressed from a limited unitary perspective. That would allow a balanced and strictly necessary consumption of resources, correlated with a human and natural capital, at the local, regional and national level, while the process of transparency of any public decision-making is still in a position of improvement. (Ministry of Regional Development and Public Administration, 2014)

In the current context, in the view to achieving the objectives of sustainable development and to materializing thereof in an appropriate social impact, it is necessary to establish partnership relations between the citizens, the members of the social community, the local decision-makers and the civil companies, economically, socially, culturally and ecologically correlate the use of any resources.

The most relevant principles of sustainable development to be observed in the context of the impact are encouraging both citizens' and business partners' active involvement in the decision-making process, ensuring good relations of solidarity between generations, ensuring the protection of the fundamental human rights. Also another principle refers to encouraging the population to follow an open and democratic vision, harmonizing public policies with the qualitative level of governance, and implementing new methods to ensure the efficiency of any investment and economic performance through impact assessments. (Romanian Government - Ministry of Environment and Sustainable Development - National Center for Sustainable Development, 2008)

As for the way to monitor the observance of the principles of sustainable development through strategy the European Commission has established periodic implementation and follow-up procedures by reports submitted each two-year period, to identify the extent of meeting the concerned issues. (Romanian Government - Ministry of Environment and Sustainable Development - National Center for Sustainable Development, 2008) However, the need to use tools to monitor and validate the social impact is marked by the existence of several methodological deficiencies, from the perspective of using a set of coherent indicators to ensure the connection of the involved fields and a transparent system for collecting and interpreting the information.

The efforts to implement an effective monitoring system have intensified due to current connection problems and compatibility between the empiric and standard approaches in the areas that imply social impact and sustainable development.

The social impact on projects should not be deal with only from the point of view of the public institutions, especially since the various private entities have been involved, over time, in the provision or monitoring of the public programs or projects. Motivated by this partial transfer of responsibility, the social interests may become convergent over time and may change from a public to a private character. The joint actions of the private and public companies should be promoted in a transparent manner, being a support of a high degree of endogeneity in meeting the public interest. (Mahoney et al., 2009) When it comes to dimension the amount of investment to accompany any level of protection, a new issue raises up - government's choice problem. "When deciding on the level of protection to provide now, the government must take account of the option value of increasing the level of protection in the future". (Kousky et al., 2006)

An agreement on certain indicators is a continuous concern of the Office of Statistics of the European Community (Eurostat), the United Nations Economic Commission for Europe (UNECE) and the Organization for Economic Cooperation and Development (OCDE), not only for the financial component, but also for the social and ecological factors. Romania supports this process through the National Institute of Statistics, which collects the data and afterwards sends the resulting indicators system to Eurostat, as regards the available data. In this stage, it is necessary to develop an effective system of inter-institutional cooperation, to quantify the specific elements of human and social capital and the capacity for supporting the natural eco-systems.

The national sustainable development indicators are focused on the key- priorities, just to allow comparing the local to the international performances, but also to the objectives of the EU's Strategy of Sustainable Development. (European Commission, 2016) The recommended indicators are permanently correlated to the entire expected outcomes, but also to the availability of collected data, respectively the transparency level thereof.

The assessment of the social impact on the public projects is carried out individually, and it is not regulated under an integrated perspective, from the design phase to the monitoring and control phase. In this respect, each organization has tried to adopt and use the best solutions, in line with the local context, without an unitary acknowledgement.

Moreover, several adopted solutions proved major limits, as for the manner used to collect, to confirm and to check the needed information.

The results obtained in the assessment and monitoring of the social impact during the ex-post phase of assessment cannot be directly correlated to the assumed objectives, and in such case, the outcomes of the public project cannot be considered as having high efficiency.

An example for a successful project is represented by "social enterprises that are being promoted as responsive and innovative way to deliver public services. As part of this promotion, these organizations are being required to demonstrate the social and economic value they generate." (Millar & Hall, 2013)

Another issue in the process of assessing social impact is related to the moment when social impact arises, which is associated as an effect, as referred to the moment of effort consumption. In most situations, the possibility of checking the generated social impact is delayed by a considerable time, sometimes-even years, and the effect is more a consequence of several events and less a result of the project.

The social impact of the public projects is also strongly influenced by the evolution of collateral scopes, e.g. education, health protection or adult's education policy, as such aspects may socially and positively influence the size and outcomes of the impact. In this case it is necessary to apply a designation process, which involves the calculation of the corresponding percentage (the proportion of the result attributable to the project) as compared to other results related to the environment of evolution.

The specialized literature recommends using the social return on investment as a solution in the process of substantiating the public projects. (Nicholls et al., 2012) Among other models and tools, the Social Return on Investment (SROI) serves as an instrument of causal contribution analysis. (Manetti, 2014)

Present findings from an evaluation through social return on investment analysis of transport that provides access to workplace, training and childcare in rural Highland Scotland showed that social benefits outweight the investment by 3:1. (Wright et al., 2009)

The social return on investment - SROI is a methodological framework for measuring and assessing the social impact and the way in which value is created, the latter being focused on reducing inequalities, on avoiding the process of environmental degradation by integrating the costs, and the social, environmental and economic benefits. (Nicholls et al., 2012)

The use of SROI in the substantiation of the projects refers to the concept of social value, quantified in monetary terms, motivated by the fact that the monetary unit has a common, useful and widely accepted feature. As compared to the classical profitability rates, *SROI* completes the financial projections with quantitative and qualitative information regarding the changes in the quality of life, the balance of resources consumption, and social protection indicators.

In the context of this approach, it is necessary to harmonize decision-making factors locally, regionally, nationally and in the society, and to follow up each stage of implementation of the public programs and projects.

Social impact assessment requires the creation and development of collaboration and coordination relationships between the community members and the decision-making public institution.

A difficulty in ensuring the social impact of the public programs and projects is also generated by the local authorities' rigidity and incapacity to involve the community in

managing and deciding on public investment, with an impact on the citizens and the environment in which they operate. It is the responsibility of the local public authorities to use and maintain the economic, environmental and social infrastructure, as well as the planning and establishment of methodologies and environmental legislation. Given these primary responsibilities of the local public authorities, they must take into account that the investment decisions involve an increased level of technology that may have a direct impact on the environment (e.g., waste management, wastewater treatment, noise mitigation).

According to the research conducted by the United Nations Centre for Human Settlements – UNCHS (Habitat) and the International Environmental Technology Centre of the United Nations Environment Program – UNEP, the public authorities may contribute to sustainable development and social impact though two major means. The first refers to the capacity of becoming aligned to the regional national and international standards and programs in the scope of sustainable development, while the second aims at ensuring effective public investment programs by the responsibility and use of socially innovative technologies and environmental protection. (United Nations Environment Programme, 2009)

3. Conclusion

The social impact of the public investment programs and project has become a major priority of the local and central authorities that can no longer neglect such a component, both from a strategic and operational point of view. However, only a stable economic support, an integrated strategy of sustainable development, a better involvement, and a higher efficiency and transparency of the local public authority can ensure a medium- and long-term social impact. Most often, social impact assessments are significantly affected by the frequent changes in the objectives and interests of the political decision-makers, who, by their power, may ignore the principles of economic and social sustainability. (Romanian Government, Ministry of Labor, Family, Social Protection and Elderly, 2015) Given such permanent changes in the strategic orientation of the society and the problems it faces, I consider that it is necessary to reevaluate the correlation between the regional public investment programs and the real capacity to support the natural capital and the assumed social objectives.

I consider that the social impact assessment should be extended from the first stage of project preparation (indicators related to the project documentation) to the entire life cycle of a public program or project. In the first stage, the indicators, such as SROI, are considered to be sufficient to substantiate the project, but for its performance it is necessary to develop new methodologies with specific tools to be used during the implementation and operation stage.

Such incorporating approach cannot be assured without establishing certain requirements and restrictions for this article type, to which the projects may refer from a social point of view. Positioning the economic, social, and environment objectives in a competitive system at the level of the project may impact its performance on medium- and long-term from different efficiency viewpoint: social, financial, and environment. (Loveridge, 2016) The three categories of objectives must be strategically and operationally harmonized, to determine a constant and positive evolution. The social impact assessment in the public projects shall be carried out in the context of an in-stages approach, which takes into account the social problems as for the form of existence and the means of identification thereof, and the activities necessary to solve these issues, as well as the change generated by such activities.

The potential solutions from this perspective shall be based on the principle of sustainable partnership between all entities directly and indirectly involved in the project. The reason of such approach is justified by the fact that the impact, regardless of its nature, is generated by one party and acknowledged by other parties. This requires transparency, appropriate level of recognition, convergence of objectives, while such aspects are hardly implemented at the local and regional level.

Acknowledgment

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ASSESSING THE ECONOMIC IMPACT OF PUBLIC INVESTMENT

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Abstract. The performance of public investment is a complex concern of organizations interested, on the one hand, in increasing the allocated volume but also in identifying the best methods of use. An important component in assessing the performance of public investment is represented by the different types of impacts generated. Globalization has directly influenced the nature and dynamics of public investment projects, in terms of both increasing transfer speed efforts especially the expected effects. On the one hand, competition for resources has led to an increase in costs, and on the other hand, the expected performance level of the results has shifted to the international level. This paper is dedicated to a research on the possibilities of assessing the economic impact on the public investment. The economic impact is analysed from the perspective of organizations involved throughout the life cycle of the public investment project with a specific indicator system. The motivation to choose the economic impact for the present research is related to the issue of the sustainability of public investments. Research results highlight how public investment projects can generate a positive economic impact on the community level. The relevance of the results is ensured from the perspective of public decision makers, who can use new selection criteria in the project substantiation process. Public decision makers can thus, identify and promote those intelligent investment projects that generate medium- and long-term results with stimulating effects on local economies.

Keywords: public investments, economic impact, performance

JEL Classification: H11, H43, R51

1. Introduction

The economic and social development of the communities is influenced by the way their representatives define and implement sustainable development strategies, according to the local and regional needs and also to the macroeconomic envisaged objectives. In the big picture of the supporting elements of the sustainable development strategy, the financial vision and the implemented financial management are extremely important in the context of corporate challenges and conditions related to the availability of resources. For the period between 2014 and 2020, Romania, as member state of the European Union, plans to increase the capacity of local and central public institutions to attract and efficiently and effectively use available European funds, having as final goal a higher performance level of provided services. The modern vision on the public system aims to consolidate a position of technical, economic and political basis to develop and implement major country projects and to sustain

economic growth and improve competitiveness. (Ministry of Regional Development and Public Administration, 2014)

The effects of the global financial crisis are felt at the level of local and central financial capacity. Although desirable, the process of financial decentralization of the public administration faces major difficulties in terms of how resources are allocated and the impact generated by them. (Slijepcevic, 2018).

The motivation for the development of this research is related to the increase of the level of economic vulnerability of the communities. In this way, complex preoccupations for the determination of the Economic Vulnerability Index (EVI) have been developed by the United Nations Development Policy Committee. This index has the advantage of capturing only independent factors of a strict economic nature related to a particular country, but also by the influences of other categories of factors and risks. (Gnangnon, 2018).

2. Body of paper

As main support of development, public investments are a priority for the central and local administration, constantly preoccupied to increase their volume, but also to ensure a superior performance level.

If in regards to the capacity to attract public funds, public authorities initiated training programs and developed the institutional capacity, the manner in which these resources are used remains a challenge according to the principles of sustainable development.

The performance of public investment projects is a major request for the responsible human resources aiming to define such requests specifically, even in the foundation stage, and also the manner in which it is quantified and evaluated in the exploitation stage.

The main objective of the present study is related to the manner in which public projects may generate an economic impact on communities' level as well as how it can be identified, evaluated and replicated.

The reasoning of this study is related to the need of developing a methodological framework for the evaluation of economic impact of public investments so that they become a catalyst of the growth processes, both locally and centrally.

The academic literature proposes various evaluation methodologies of the impact of investment projects, structured on four relevant dimensions. These four dimensions are structured in figure 1.

Figure 1: Relevant dimensions for measuring the impact in investment projects

Estimation of the impact	Planing and quantifying of the impact	Monitoring of the impact	Evaluation of the impact
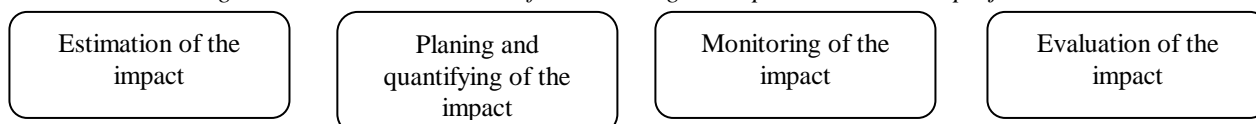
Source: (Ivy & Staskevicius, 2015)

The first stage refers to the manner in which the impact of a public investment project can be estimated based on the existing information from similar projects, from the experience of other entities or from any other available source. This stage is crucial for the foundation and approval of the project based on the estimated impact. The quality of this dimension depends

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on the human resources experience involved and on the access to information. The higher the originality of the project, the more difficult is to estimate the economic impact and it requires a more detailed research work.

The planning and quantifying dimension refers to the manner in which the estimated impact is planned in terms of time and quantified in terms of quantity and quality. The performance of this dimension is influenced by the specificity of the project and the assimilated time frame and also the reasonable and objective possibility to quantify. In this respect, defining of specific indicators for quantification must be supplemented by the instrument recommended to be used and, if the case, by an analysis and comparison scale.

In fact, to monitoring of the impact means to apply the methodologic framework, previously defined for the project being implemented so that the generated impact is consistent with the estimated one in terms of categories, volume and associated quality. The human resources responsible for monitoring, available time, possibility to use the instruments and reporting manner are relevant to this dimension.

The last dimension specific for impact evaluation refers to the post-implementation period, when the total generated effects and the accumulated and disseminated good practice training are relevant. The approach of the economic development process is also analysed by the academic literature from the perspective of the polarization pattern, which considers criteria such as: number of people and their amenity; economic power and competitiveness; master education level; territorial representation and perspective to support the regional consolidation process. (Peptanatu et al., 2009)

The comparison between the total generated and ex-post quantified impact and the estimated one is a priority component when assessing the performance of the investment project. The specificity of the public investment projects is determinant when assessing their economic impact. In many cases, it is considered that public projects result from real and actual needs to be resolved by the representatives of the communities, irrespective of the generated costs or generated impact.

The development priorities correlated with the volume and availability of resources require a change of attitude in the strategic approach of investments, one that considers the economic impact. This change can be also justified by the fact that performance on a community level is also sustained by the development of the public – private partnership based on principles of mutual transparency and efficiency. The harmonization of public and private interests obviously includes the generated economic impact and its medium and long-term growth possibility. (Mahoney et al., 2009)

Other relevant features of the processes such as causality and comparability also influence the evaluation of the economic impact of public investments. The former refers to the fact that the managers, the administrators and the political decision factors must analyse if the economic impact is the result of the project or of a favourable circumstance, case in which the decision may be based in a counter-fact analysis, respectively based on the evolution of the community if the project did not exist. (Duflo et al., 2008), (Brest & Born, 2013)

Authors such as (Agénor & Moreno-Dodson, 2006, Fourie, 2006) underline the fact that the public investment projects may trigger economic effects such: decrease of production factors cost and of natural resources by easier access. Other effects can be growth of human resources productivity by improving life conditions, creating new jobs by implementation,

exploitation and maintenance of achieved investments, but also by improving education and health standards

The classic investment management measures the economic impact of investments by using standard indicators, such as financial and economic profitability or market value, compared with regular values set as average marks in the field (McGahan, 1999). The difficulty to apply regular standards increases significantly when we refer to public projects such as quality of education, environment infrastructure or crime prevention.

On a national level, Government Resolution no. 907 of 2016 regulates from a legal point of view the evaluation actions of the economic impact, the drafting stages and the framework content of technical and economical documentation on investment objectives/projects financed from public sources. According to those laid down in this legislative framework, the economic impact is identified and evidenced on a concept level, on the level of the design theme, as well as in the feasibility and pre-feasibility study (if the case). From a quantity perspective, the economic impact is estimated and quantified based on the economic efficiency indicators; the most frequently used are the internal profitability rate, the updated net income and the return on investment time.

The main disadvantages of this methodology are related to the following aspects: the indicators are calculated based only on estimations; forecasts, some of which may be subjective, the accuracy and validity of the information used for computing cannot be objectively checked and validated. The values of the indicators cannot be updated in case of change in the evolution of the project environment, but also the fact that the indicators' values are not used during the exploitation or sustainability analysis period.

In this context, I see it is necessary to approach the evaluation process of the economic impact of public investments. This methodologic proposal to evaluate the economic impact of investment may be a relevant technical instrument for the deciding factors that aim for superior performance level of the investments.

Figure 2: Methodology proposal to evaluate the economic impact
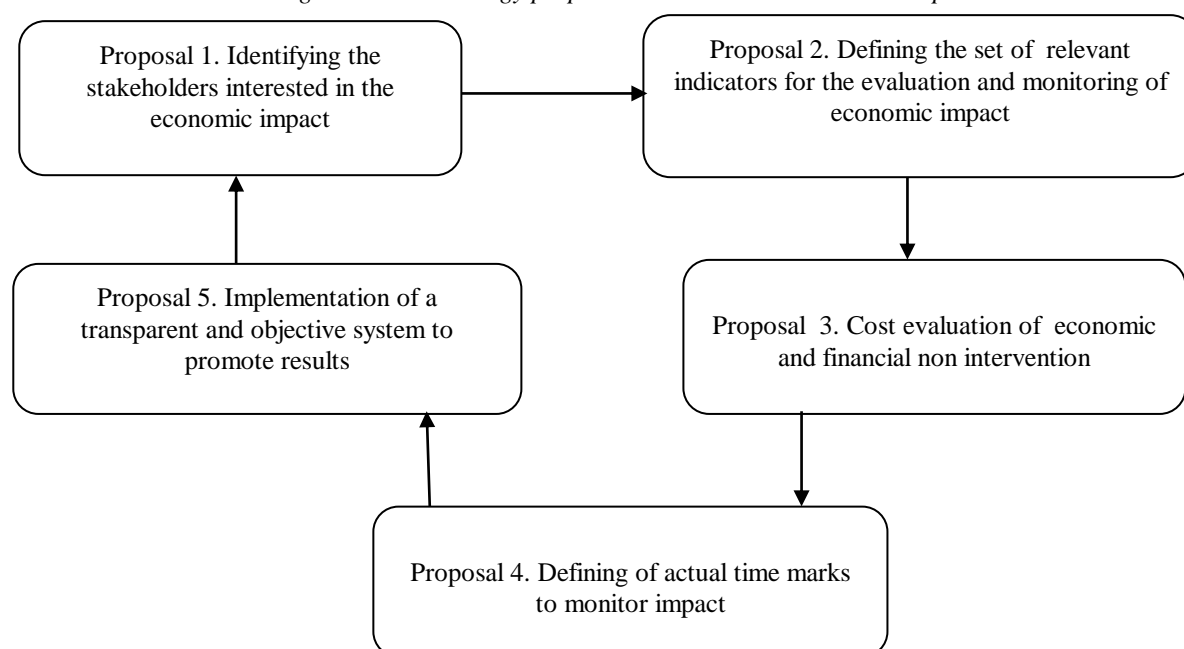
Source: (own representation)

The evaluation of the economic impact of public investments considering the four dimensions as presented in this proposal envisages first to identify the categories of persons/ organisations or other categories of entities that may be economically affected by the future project. This category includes individuals, community residents, economic and private organisations that produce goods and render services, public entities, local and regional associations and foundations.

They can perceive the economic impact in different manners and this is why the academic studies for the foundation of public investments must include specific elements for each category. Identifying and quantifying the positive economic impact is mandatory for the owner of the investment, but I also think that the negative impact should not be neglected and it is important to propose mitigation measures still in the project stage.

The identification and analysis of stakeholders from economic perspective must also consider the specificity of the activities included in the proposed project or the field of implementation. To include a very large number of stakeholders, who are not relevant or who benefit from an economic impact, but from another project, may influence the result and implicitly the decision to finance the project. (Nicholls et al., 2009)

Restrictive use of quantitative methodologies, such as ROI, can in some cases lead to incorrectly-grounded decisions. Possible dysfunctionalities can be determined by the fact that a meta-analysis is performed, and the perspective of calculating costs, discount rate and time horizon may be different. (Masters et al., 2017)

As per the principles included in the public administration consolidation strategy of transparency, professionalism, predictability and customization to needs/receptivity, the founding documentation of the public investment must also recognise the potential negative economic impact and propose solutions.

A second proposal to improve the evaluation framework of the economic impact envisages defining some specific indicators, considering the categories of entities influenced by the project, as well as the method to quantify and subsequently monitor these indicators. If indicators can be proposed rather easily considering their diversity in the academic literature, measuring them and assessing the associated period may create certain difficulties.

From this perspective, we consider as useful to define an optimal number of economic impact indicators associated with categories of public investments and potentially involved entities. One must identify for each indicator the composing scales, the method to pick data, but also a benchmark system, which allows one to assess the potential performance. The benchmarks and their associated features can be defined considering the existing history at the level of central authorities, with tasks in the field of financing and monitoring.

We propose to build the indicators considering some major criteria of general interest for all the entities involved, respectively: economic efficiency, relevance, economic sustainability and good practice training.

Another proposal of the present research is to include the elements related to non - intervention cost in the financial effort indicators of the investment project. The latter must reflect the potential loss from an economic perspective in case the project is not implemented.

To substantiate this cost component it is necessary to estimate losses based on similar situations, at the level of comparable communities from the perspective of development degree and demography.

The fourth direction to improve the evaluation process of public investments economic impact envisages defining some actual time marks as reference intervals when the selected indicators are recomputed and subsequently the management and operational decisions are optimised. These reference intervals can be set considering the manner and the period in which the economic impact appears. The subsequent decisions based on the new values of the indicators may envisage optimising the subsequent resource consumption, to identify and capitalize on the new opportunities from economic perspective.

The period associated with monitoring the project indicators must be correlated to the dimension of the impact in the sense that a major impact, which influences the improvement of life conditions, may be evaluated only after it manifests accordingly.

Another proposal related to the evaluation of the impact is oriented towards the implementation of a transparent and objective system to measure the impact. Most frequently, the local or regional responsible persons are allowed to design and implement their own system and to subsequently provide only the results. This situation generates a major vulnerability of the process, in the sense that performance and impact on documentation are according to the communities' expectations, but in reality, the difference between the two values is very high.

The approach of public projects in terms of impact has to be correlated from the perspective of the three relevant dimensions: economic, social and environmental. (Hussain et al., 2018) Their integration must be done from the perspective of their efforts and effects, but also because the lack of resources or the incorrect allocation determines the impossibility of a positive impact.

Recent research in the literature has revealed that the study of the impact of the unique dimensions of sustainability on the financial performance of organizations has reorientated towards a total impact of sustainability, later transformed into a strictly economic - ecological - social combination. (Alshehhi et al., 2018)

To define the both the quantitative and qualitative measuring methods of the impact still in the documentation phase may be an improving solution. The objectivity and transparency degree would increase considerably and the advantage to compare results would allow a better allocation of resources at the level of the public financing entity.

Implementation of the proposal shall create several advantages for the decision-makers at the level of public authorities, the most relevant being:
- to improve the allocation, use and monitoring system of financial resources;
- to increase the level of transparency, objectivity in the management of public investments;
- to facilitate the implementation of a standardising system in public investments, as reporting reference of any initiative, irrespective of the beneficiary, typology or particularities;
- to ensure a level of consent with respect to the economic impact of the projects at the level of all interested and involved parties;

- to increase the integrability degree of the projects in the area of strategic objectives at regional, country or field of activity level;
- to better understand the need of economic sustainability of public investments, even if the effects appear on medium or long term.

The difficulties in the implementation of these proposals come from the existence of a large number of public investments types, the significant number of entities involved in the management of financial resources, the strong influence on the project of the implementation place, of the subjectivity and various interest degree as opposed to the objectives of politic factors and economic strategy. But the manner in which results are collected and reported, how useful they are for other future beneficiaries and good practice training require modern systems for information management that may generate additional costs and also efforts in the field of informational and human resources.

The implementation of public programs and projects is conditioned by the country-wide cost estimation methodologies. Developing common cost-cutting frameworks tailored to the specificities of each country is useful from the perspective of investment standards, considered to be the support of public policies. (Carroll et al., 2018)

3. Conclusion

A new approach of the evaluation of the public investment economic impact is the result of at least two perspectives, asserted at both local and regional level. They are related on the one side to the significant growth of needs at community level, in the context of a free access to information and technology and on the other side to the ever-decreasing volume of financial resources available to public entities. More and more, the economic impact becomes a priority in the context of the need to capitalize on a superior level on the opportunities offered by the community, to ensure development and sustainability. The politic and economic objectives must be correlated still in the scheduling stage for medium and long term so that the necessary convergence, the volume of resources and the time associated with economic impact generation are ensured.

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THEORETICAL FOUNDATIONS OF ECONOMIC EDUCATION AS AN INTERNATIONAL PROBLEM

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Abstract. The most valuable component of the national wealth of the modern state is the intellectual potential of the nation, which formes through an effective education system and determines the competitiveness of the national economy and the prospects for its further socio-economic development. The article deals with the problematic aspects of higher education system on the example of economic education as one of the most important factors of formation of intellectual capital in modern conditions of constant development and globalization. It is noted, that the theoretical and practical failures of the neoclassical direction of economic thought, which mainly constitutes the content of basic theoretical disciplines in most countries of the modern world, largely determine the insufficient quality of training for economic specialists. The article cites arguments disputing certain methodological principles of neoclassicism and affirms the necessity of minimizing the use of market methods in the sphere of education. The author also notes a certain conditionality of the problems of higher education with the quality of the school educational environment. Thus, the article confirms that the education system forms the intellectual capital of the nation and should be considered as a necessary component of the state economic and national security.

Keywords: economic education, foundations of economic education, intellectual capital, neoclassical theory

JEL Classification: A20, F11, F60

1. Introduction

The most valuable component of the modern state national wealth is the intellectual facilities of the nation.

At present, there is no doubt that it is necessary to preserve and increase it in order to implement an innovative option for the national economy development. (Oreshkin, 2018) The competitiveness of the economy of any country and the prospects for its further socio-economic development mostly depend on it.

The formation of intellectual potential is carried out mainly through the education system. Among other things, ensuring the proper quality of economic education is essential and significant in this process. The state of the national economy and the prospects for its further

development largely depend on it. It can be argued that the educational system is a necessary component in ensuring the economic security of the state. (Kuporov et al., 2018)

Unfortunately, over the years of the current reform, the level of training of economic personnel in the Russian Federation has decreased, which is noted in a number of publications, the authors of which state the General weakness of intellectual and qualification training of employees. (Blinov & Rudakova, 2013; Daskovsky & Kiselev, 2013)

2. On same problems of the education system

2.1 Theoretical and practical failure of neoclassical theory

It seems that the decrease in the quality of basic vocational education of economic specialties is largely due to the questionable scientific and practical consistency of the theoretical background of the system of economic disciplines – scientific concepts and theory, the basis of existing educational programs in economic theory. In accordance with the current teaching standards in the Russian Federation in the educational literature interpretation within the neoclassical direction dominates. (Egorshin et al., 2007; Heskett, 2017)

There is the fair statement of the outstanding Russian economist of the 19th century M. Tugan-Baranovsky: " Political Economy is the theoretical basis of the Economic policy". (Rybakov, 2013) I want to continue with the words "like any professional activity of an economist."

The author of this article has already noted some theoretical inconsistencies and contradictions of educational material presentation in this area of economic science in one of the previous publications. (Dyshaeva, 2015)

In this article I would like to emphasize some features of the neoclassical theory methodology and the quality of the material presentation in the educational literature, which determine the content of the modern course of economic theory and ultimately its scientific validity and practical significance.

A) The vast majority of topics in the interpretation of neoclassicists presuppose conditions of perfect competition, although the present economic reality is fundamentally different. «n a highly competitive labour market ... the equilibrium wage W_c and the number of employees Q_c are determined by labor supply S and the demand for labor D.» (Brue & McConnell, 2016) In the modern countries' economic systems there are various forms and methods of state participation and economic and social processes regulation, the growth of the monopoly power of manufacturing firms with the development and consolidation of the scale of social production, complemented by the processes of globalization and internationalization of society economic life. In addition to the above, it is also necessary to take into account the impact on economic processes of other social institutions: trade unions, national and supranational economic, environmental and public organizations, etc., which also, in neoclassical terminology, "violates the conditions of perfect competition."

B) The unconditional rationality of economic behavior of economic entities and consumers, which is supposed by neoclassicists, does not exist in real life at least due to incompleteness and distortion of the information necessary for economic decision-making,

different degrees of competence and integrity of persons making management decisions, which is currently more or less "shadow" activity in some countries, etc. (Calvo, 2018)

C) Unlike the classical school of political economy, neoclassics deliberately avoid considering economic issues from the standpoint of the interests of certain social groups of society, seeking ideological neutrality of economic analysis. In their theoretical schemes, they also take into account human psychology, but this is a fundamentally different approach and level of analysis: the subjective feelings of individuals as participants of economic relations about certain economic phenomena without taking into account their belonging to a certain social layer of society. This approach seems to be unproductive, because according to the saying,"opinions differ". As a result, the observed abstract reasoning on macroeconomics' themes of dubious practical relevance.

D) Within the framework of the neoclassical concept, the authors consider mainly quantitative characteristics of economic phenomena based on the active use of mathematical methods – graphical, functional, limit analysis – without penetration into the essence of the phenomena and designation of the most important objective cause-and-effect relationships in economic processes. At the same time, if mathematical methods were considered by economists-mathematicians of the 19th-20th centuries only as one of the tools of economic analysis, in the theoretical concept of neoclassic mathematical methods often replace the substantive aspects of economic theory, without providing an increment of economic knowledge. To illustrate the discussed allegations refer, for example, the statement in the section "Microeconomics" of educational material on the subject "labour market". (Pindyck & Rubinfeld, 1992) How much sense does it make to consider in a "perfect competition" (!) interaction of functions of demand "for work "and offers" work" (terminology of the operating textbooks – a bus.) as a monolith and the formation of "the equilibrium amount of labor and the equilibrium wage rate as the price of "labor", without taking into account the elementary: represented in the "labor" market the totality of the labor force is differentiated, at least, on professional-qualification grounds? It is also well known that the amount of wages in real life is determined by many factors. The experience of modern developed countries suggests that the size of the salary of each individual employee depends on his professionalism, on the length of service in general and in this very enterprise, in particular, on personal characteristics (level of integrity and responsibility of the work, initiative, entrepreneurship, degree of creativity, communication, etc.), adjusted to the social significance of the work performed and the socio-economic situation in a country and, ultimately, is reduced to a monetary assessment of the value of labor force quality, that consistently and scientifically stated in Marxist economic theory.

E) It is necessary to mention one more drawback of the neoclassical methodology: the passion for graphic interpretations for the sake of the presentation clarity of the material forces the authors to simplify the phenomena under consideration so much that the analysis falls out of consideration more important than the factors taken into account. This leads to the results of doubtful reliability, or "reset" them. For an example, let us turn to the topic "fundamentals of supply and demand theory". The interpretation of the market pricing mechanism by A. Marshall (the author of this theory) bypassing the theory of value, and even in conditions of perfect competition in itself raises questions. (Chepurin & Kiseleva, 2009; McConnell, 2003; Samuelson & Nordhaus, 1997; Fisher et al., 1998) Let's turn to the following. As the main factor influencing volumes of the goods offered for sale, its price is considered. The reasons could be found as following. Economic reality is replete with many

factors that can have no less significant impact on the volume of the goods offered for sale: for example, the condition, novelty and, consequently, the performance of technological lines, the price policy of manufacturers and trade organizations; the regional market situation; the presence and content of the market with substitute goods; the degree of monopolization of the industry market and the scale of shadow activity; the speed of development of fundamentally new types of products by manufacturers to meet the same needs; the degree of involvement of the national economy in the processes of international trade, etc. – all that is taken into account in the normal case in marketing research and strategies. However, for the sake of clarity of presentation of the material, for the opportunity to give a graphical interpretation of an issue, A. Marshall is forced to consider the functional dependence of supply on the same factor as that of demand. It is fair to say that the consideration of this issue by A. Marshall also involves taking into account some non-price factors that affect the supply, but only in addition to the main, in the opinion of this economist, price dependence. Thus, the discussed defect of the neoclassical methodology is manifested. Finally, due to the consideration of the neoclassical interpretation of the market pricing process, attention should be paid to the following. Back in 1817, the outstanding English classical school economist D. Ricardo, analyzing the problem of cost and pricing, made an important conclusion: "the price of goods is ultimately regulated by the costs of production, but not, as often claimed, the relationship between supply and demand. Of course, the relationship between supply and demand can influence on market value of goods ... But this effect will last temporary". (Kostyuk, 1998)

F) The next point is the fact that the authors-developers of neoclassical postulates are not confused by the weak correspondence of the abstract theoretical schemes of objective economic reality proposed by them. Both the conditions of the notorious perfect competition, and the unconditional rationality of economic behavior, and the completeness and reliability of commercially significant information for making validate decisions, and the rational use of resources – all this is poorly correlated with real economic processes. However, all of these neoclassical analysis prerequisites assumed in each training topic section "Microeconomics". How can we build logical chains of reasoning, based on obviously unrealistic assumptions? And what is the sense of such theoretical constructions for economic practice? It seems that the interest of the thinking students to the educational courses of the marked theoretical fullness disappears during the educational process, which causes a part of the student audience a formal attitude to learning. How can we build logical chains of reasoning, based on obviously unrealistic assumptions? And what is the meaning of such theoretical constructions for economic practice? It seems that the interest of the clever students to the educational courses of the marked theoretical fullness disappears during the educational process, which causes formal attitude to learning of a part of the student audience.

In our opinion, modern course of economic theory should be based on theoretical heritage of scientifically wealthy and having practical significance of schools and directions of economic science, objectively setting out and explaining the essential economic processes that ensure the integrity of the perception of socio-economic society life, allowing to develop scientifically sound and effective solutions on socio-economic policy of organization and state. Such is the classical school of political economy in its most systematic and scientific Marxist version, developed and later supplemented by studies of Russian and Soviet economists. Some ideas proposed in the framework of the historical school of Germany, American classical institutionalism of the early twentieth century, Keynesian economic theory

in terms of the justification of state regulation, German ordoliberalism are also useful and significant.

2.2 Negative consequences of the market approach in educational activities

It seems that the educational environment is a specific sphere of activity where market instruments and methods should be applied in a limited and cautious manner. It is unacceptable to consider and use education only as one of the areas of entrepreneurial activity in order to extract income. Market mechanisms, supplemented by the necessary state control and regulation, are good and effective in certain areas of activity, but in the educational sphere in its pure form are not appropriate, moreover they are destructive.

Fundamentally different criteria, approaches and values should be used here. The educational system should function under the state patronage, implementing a balanced and responsible strategy of the state to form and build the intellectual national potential in order to develop its productive forces, strengthen the competitiveness of the national economy. Ensuring the effective functioning of the educational system should be one of the country's leadership priorities (Thompson, 2017).

Unfortunately, current Russian universities, immersed in the market element, are forced to "earn money" to finance the necessary areas of their activities often to the detriment of the institution quality parameters. This applies, for example, to the recruitment on a commercial basis of students with low educational potential.

It seems that in order to create comfortable conditions for capable students to study, and teachers to work productively with students susceptible to new knowledge and, thus, to ensure the proper quality of the educational process, it is necessary to return to the recruitment of applicants on the competitive selection basis. It is important that only young people with abilities and motivated to study on the chosen profile, who already have a certain educational and intellectual potential, get to the student audience.

At the present time, with sharply different starting potential enrolled in study groups, the study conditions of "good" students are becoming more complicated. Trigger destabilizing the atmosphere of the training class factors: beginning from the disciplinary points to the educational material substantive content.

 In addition to this problem, there is another ethical aspect. Why accept applicants with clearly insufficient accumulated educational potential, realizing that such students are likely to be expelled at the end of the next sessions? Why force the families of these students to bear the waste of money in the form of tuition fees, to complicate the working conditions of the teaching staff, as well as to worsen the educational environment of students capable of learning?

It seems that there is no alternative to return to the financing of education mainly at the expense of budget funds and to restore the systematic training of specialists in various fields. This is eloquently evidenced by the experience of modern developed countries and the domestic experience of the Soviet period.

 Educational processes should be under the control of the state – this, along with the full budget financing of science and a comprehensive socio-economic policy of the state, is one of

the strategic components that can provide an innovative option for the development of the national economy.

It is necessary to return to the recruitment of applicants on the competitive selection basis in order to let only those youngsters get into the student audience who have the ability and motivated to learn the chosen profile, who already have a certain educational and intellectual potential. This will ensure that the efforts of the teaching staff will achieve the goal and, most importantly, that the trained specialists will demonstrate the proper level of qualification and professionalism.

Competitive selection of applicants will also guarantee that public funds will not be spent in vain, and will be a reasonable public investment in the formation of human capital for the national economy.

2.3 The roots of many problems of higher education - in the imperfection of the school system

Some significant problems of higher education "train stretch" from school. The overload of school curricula, the inclusion in large volumes of "premature" information, which is then duplicated already in University courses in the relevant academic disciplines, heavy style of presentation, texts (in English, for example) of dubious artistic and educational value cause diligent students, conscientiously trying to master this whole array of information, mental disorders up to suicide; the rest of the mass-a persistent aversion to the subjects of such fullness and to the learning process as a whole. In the latter case, it develops a formal relationship to educational activities, reflected at the stage of learning in high school: instead of execution of obligatory works – purchasing control, course, diplomas, etc. for reports on the academic disciplines. (Gritsenko et al., 2018) This is a separate and very sick problem of the educational system of the Russian Federation: the real educational process in this case is replaced in fact by imitation of educational activities. (Harris & Jones, 2018)

It seems that school curricula should be structured in such a way as to ensure General literacy in certain subjects to the extent necessary for the successful assimilation of University subjects. At the same time, great attention should be paid in the framework of school education to the acquisition of knowledge of humanitarian, cultural and aesthetic character (national and foreign languages, literature, history, geography, ethics, ecology, etc.), since it is about the organization of the educational process at the stage of active personality formation. The school education result is the baggage of General cultural knowledge with which a person goes mainly through life in the future. (Benabou, 1996)

The pedagogical component of the educational process and the acquisition of work skills are also extremely important for the formation of a harmonious fully developed personality. It is necessary to create conditions and financial opportunities for the development of children's creativity and sports and mass work, to instill in children an interest in this, to fully support children's creative teams.

Creating opportunities for children and adolescents to try themselves in different types of developmental activities is significant simultaneously in terms of their professional orientation in the future (Coleman, 2003)

All mentioned, obviously, only can be called the process of education as a full and responsible activity for the individual formation.

In addition to educational tasks, such an organization of the case will be at the same time the best prevention of child and juvenile delinquency. It is necessary to take into account child and adolescent psychology: if children do not create, then get up!

Another problem that arises at the stage of education in school – the negative consequences of educational activities computerization. Comprehensive computerization gives students the opportunity to extract from the Internet ready work on academic disciplines on any topic, which partly blocks, partly devalues independent thoughtful work on educational material, prevents the formation of skills of independent research and the acquisition of solid knowledge.

At the same time, the low quality of such "products" of the Internet and semiliterate texts are of little concern to its "consumers": it is possible to formally report such quality materials. This is truly a "scientific and technical regression" that causes destabilization and degradation of the educational environment!

3. Conclusion

Thus, in order to increase the national intellectual potential, strengthen the economy competitiveness targeted efforts are needed to improve educational activities. A responsible strategy of transformations in the educational sphere should be comprehensive, cover all parts of the educational system, be developed and implemented in accordance to national interests with active state participation. The necessary direction of higher economic education improvement is a fundamental content change in the educational course of economic theory.

In order to improve school education, it is necessary to balance the curriculum of some lessons, abandoning the "premature" information, which is later duplicated in University courses. At the same time, it is proposed to provide and strengthen humanitarian and aesthetic disciplines. The pedagogical component of educational process and the acquisition of work skills are also extremely important for the formation of a harmonious and comprehensively developed personality. It is unacceptable to consider and use training only as an entrepreneurial activity aiming to generate income.

The educational system should operate under government patronage, implementing a balanced and responsible strategy of the state to form and build national intellectual potential in order to develop its productive forces and strengthen the national economy competitiveness. Ensuring the effective functioning of the educational system should be one of the priorities of the country's leadership. This, along with the science full budget financing and integrated socio-economic policy of the state, is one of the strategic components that can provide national economy innovative version.

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PROFITABILITY CONDITIONS OF SELECTED COMPANIES FROM THE WIG FOOD INDUSTRY INDEX IN 2011-2017

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Abstract. The issue of food economy and agribusiness in the global economy is one of the main interests of contemporary economists. The food industry as a whole, as a research area, is also very important as well as the enterprises belonging to a specific sector. A research entity are enterprises belonging to the WIG-food index listed on the Stock Exchange in Warsaw, which are considered worth being a role model as regards their activity and in terms of organisational and legal requirements that are imposed. Transparency of functioning of joint stock companies and a requirement of submitting financial reports enables to study a financial situation of the best entities of the food industry in Poland in terms of organisational and financial aspects. A stock market index is analysed which belongs to the indexes informing current and potential investors about a change of a price level of a given company and presents the market trends in the specific time depending on a global situation. The article also deals with an attempt to identify a competitive position of the companies of WIG-food index that depends on a functioning in the global economy. In order to support an assessment of achieved financial results by the analysed enterprises the studies will be conducted with a use of statistical methods and strategic management methods that include a time series analysis and a map of aims intensity.

Keywords: wig index companies, profitability, food industry

JEL Classification: O30, L66, F60

1. Introduction

In May 2004, in the period when Poland joined the European Union structures, the food industry received a possibility of active economic exchange at the international level. The main directions of food products export have become the European Union countries. The time of Poland's accession to the European Union was the period of transformations that were strengthened by the globalisation processes and the positioning of Polish enterprises on the international market (Firlej, 2013; Firlej et al., 2017). The most important changes that took place in the agri-food industry enterprises include modernisation, restructuring and privatisation (Stoate et al., 2009; Swinnen, 2015). As a result of the introduced changes, the enterprises belonging to the analysed sector were recognized as competitors of market-

oriented activities (Duarte & Restuccia, 2010; Firlej, 2017). Market orientation is regarded as a major prerequisite for being able to create superior customer value, which in turn is regarded as a major determinant of competitive advantage (Grunert et al., 2005). The Polish companies of agri-food sector used the favourable conditions that appeared after the Poland's accession to the European Union structures and recorded a significant growth of the export level. The increasing level of the agri-food products export encouraged the entrepreneurs to expand their investments aiming at gaining a better position on the international market (Eaton et al., 2004; Jonathan, et al., 2004). The position of the enterprises belonging to the agri-food sector was mainly determined by its profitability and competitiveness (Karantininis et al., 2010). Two factors had a decisive influence on the proper functioning of the enterprises in the industry – taking advantage of appearing chances of development and dealing with failures. Competitive adventage of an enterprise that was developed by the proper management had a significant impact on the position of a given company (Firlej, 2015). According to R. Urban the accession of Poland to the European Union structures had a vital influence on the conditions of conducted activity, especially in the enterprises belonging to the agri-food sector (Urban, 2006). A good example of enterprises that implemented a strategy of the investment character are the companies belonging to the WIG-food index listed on the Warsaw Stock Exchange. An implementation and application of the management strategies of international character is possible in the companies conducting their business activity globally as well as in the small and medium-sized enterprises.

Figure 1: The pattern of changeability of the WIG-food index value from 27.04.2011 to 04.03.2018.

Source: (Authors)

The aim of the conducted study was an attempt to classify the WIG-food enterprises regarding the profitability criterion as well as to present how the achieved level of profitability of a given enterprise reflects its cometitive position on a domestic and international market. The performed research works aimed to select the most profitable enterprises and to confirm the appropriateness of relevance of the adopted and implemented strategies. A major concern was the agri-food sector and population, that was analysed, the selected enterprises listed on the Warsaw stock exchange and belonging to the WIG-food index in the years 2011-2018. The subindex WIG-food is a sector index and includes the enterprises listed in the main WIG index (Warsaw Stock Exchange Index) belonging at the same time to a several different food industry sectors. The WIG-food index was established on 31 December 1998. Similarly to the WIG index, the analysed WIG-food index is an income index, which means that when it is calculated the prices of shares contained in the index as well as proceeds from dividend and pre-emptive rights should be taken into

consideration (WIG-food, Index description). The trends in decrease and growth of the WIG-food index value in the analysed period are presented in figure 1.

The following companies belonged to WIG-food index on 23.04.2018: AUGA Group AB in Vilnius, Agroton Public Limited in Ługańsk, GK Ambra S.A. in Warsaw, Astarta Hodling NV with the seat in Amsterdam, Atlanta Poland S.A. in Gdańsk, GK Colian S.A. in Opatówek, Gobarto S.A. in Warsaw, Helio S.A. in Zaborów, Industrial Milk Company S.A. in Kijów, GK Indykpol S.A. in Olsztyn, KSG AGRO S.A. in Luxeembourg, Kernel Holding S.A. in Luxembourg, GK ZT Kruszwica S.A. in Kruszwica, Krynica Vitamin S.A. in Warsaw, Makarony Polskie S.A. in Rzeszów, Marie Brizard Wine & Spirits in Ivry-Sur-Seine, Milkiland NV in Amsterdam, GK ZPC Otmuchów S.A. in Otmuchów, Ovostar Union in Amsterdam, GK Pamapol S.A. in Rusiec, Pepees S.A. in Łomża, ZM Henryk Kania S.A. in Pszczyna, Seko S.A. in Chojnice, Tarczyński S.A. in Trzebnica, Wawel S.A. in Kraków.

The analysis of the WIG-food index companies profitability enabled to study and characterize their proper functioning and confirm or reject the accuracy of the strategy they use. In case of the companies listed on the Warsaw Stock Exchange and belonging to the WIG-food index their participation in the capital market requires transparent activities, and at the same time making accurate decisions. An additional asset during the verification of the WIG-food index companies is an obligation to submit a financial report by each company listed on the Warsaw Stock Exchange. These activities have a significant impact on the effective corporate management. According to the conducted studies the majority of the WIG-food index companies operate on the international markets. It results from the increasing internationalisation of trade and modernisation of enterprises (Chaney, 2008). In studies of the US retail food industry, we find that while a general dynamic capability affects firms' competence in supply chain management, it does not affect their competence in environmental management (Marcus & Anderson, 2006). The enterprises listed in the WIG-food index are obliged to carry out economic activities appropriately in accordance with the adopted strategy.

2. The aim of the article and methodological rules of profitability calculation of the selected WIG-food index companies

The article deals with an analysis of profitability of the selected WIG-food index companies with the aim to present a position of a given company compared to the other companies. Table 1 presents the main internal and external factors determining the company's profitability.

Table 1: Factors determining the company's profitability.

	Internal factors	External factors
1.	value and structure of company assets	domestic economy as a whole
2.	structure of capitals and liabilities	inflation rate
3.	funds liquidity	level of income of the population, etc.
4.	efficiency of working capital management	existing system of financial burdens (e.g. taxes)
5.	sales development	monetary policy instruments used by the Monetary Policy Council: credit ceilings

Source: (Niesyn Z., Czynniki kształtujące wynik finansowy, Warszawa 2011)

The following enterprises were selected on the need for carrying out the study: Agroton Public Limited in Ługańsk, GK Ambra S. A. in Warsaw, GK Colian S.A. in Opatówek, KSG AGRO S.A. in Luxembourg, GK ZT Kruszwica S.A. in Kruszwica, Makarony Polskie S.A. in Rzeszów, Milkiland NV in Amsterdam, GK ZPC Otmuchów S.A. in Otmuchów, Ovostar Union in Amsterdam, GK Pamapol S.A. in Rusiec, Pepees S.A. in Łomża, Seko S.A. in Chojnice and Wawel S.A. in Kraków. The selection criterion was a cpmpany presence in the WIG-food index during the analysed period.

The aim of the study was to define structural transformations in the finances of the selected WIG-food index companies. The following selected financial values were used in the study: sales revenue, net profit, total assets, an equity value. On the basis of these financial values, the selected financial indicators, used in the study, were calculated, including ROS, ROE, ROA, assets turnover ratio, equity multiplication factor. In addition, a comparative method and division of values method as well as Ward's grouping method were used in the analysis. The data referred to the characteristics of 13 selected companies, from the years 2011-2017 was used in the study. In order to classify groups of enterprises the division of selected finansial values, relating to the companies activity in the period 2011-2017, was used.

Figure 2: Histogram with net sales revenue from products, goods and materials (thousand zloty).
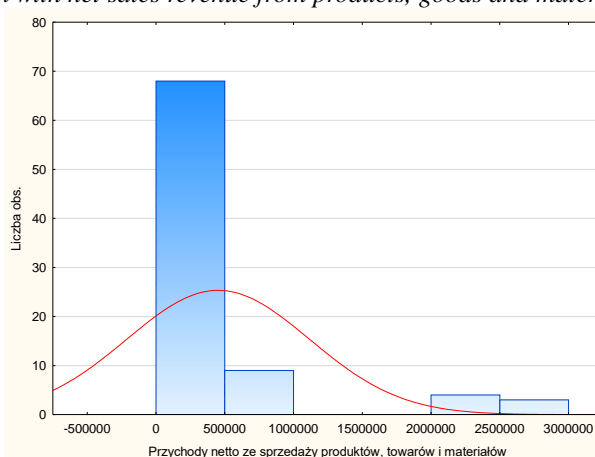
Source: (Own study based on the data Money, money.pl, downloaded: 05.07.2018)

Figure 3: Histogram with net profit (net loss) (thousand zloty).
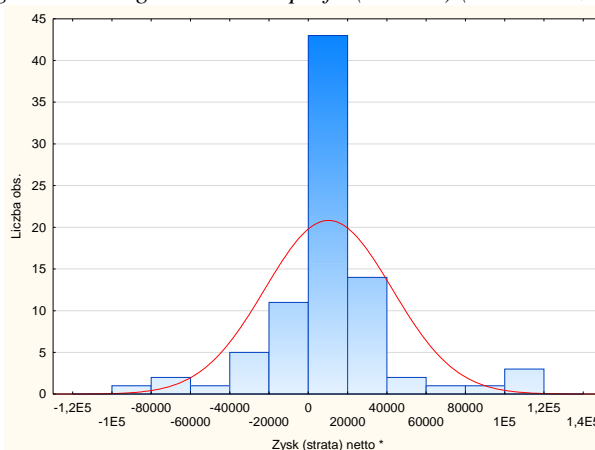
Source: (Own study based on the data Money, money.pl, downloaded: 05.07.2018)

Figures 4: Histogram with total assets (thousand zloty).
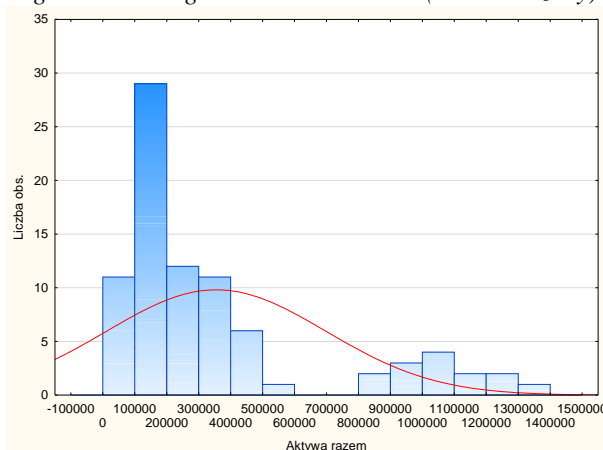
Source: (Own study based on the data Money, money.pl, downloaded: 05.07.2018)

Figure 5: Histogram with equity (thousand zloty).
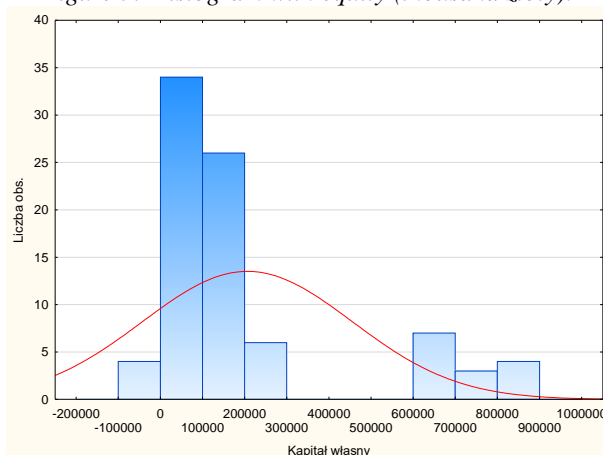
Source: (Own study based on the data Money, money.pl, downloaded: 05.07.2018)

As a result, 92 variables referring to the individual factors were obtained, as presented in figures 1-4. Net revenue was divided into six ranges (0 – 500 mln PLN; 500 – 1000 mln PLN; 1000 – 1500 mln PLN; 1500 – 2000 mln PLN; 2000 – 2500 mln PLN; 2500 – 3000 mln PLN). In reference to the results relating to the profit values in the analysed period a range was divided into five groups (loss below 40 million PLN, loss between 40-0 million PLN; profit to 20 million PLN, profit between 20-60 million PLN and profit above 60 million PLN). The assets were divided into four groups (0 – 300 mllion PLN; 300 – 700 million PLN; 700 – 1100 million PLN; above 1100 million PLN). The last selected characteristic, the equity value, was divided into three groups (below 0 PLN; between 0 and 300 million PLN and above 300 million PLN).

Figure 6: Dendrogram of the selected variables.
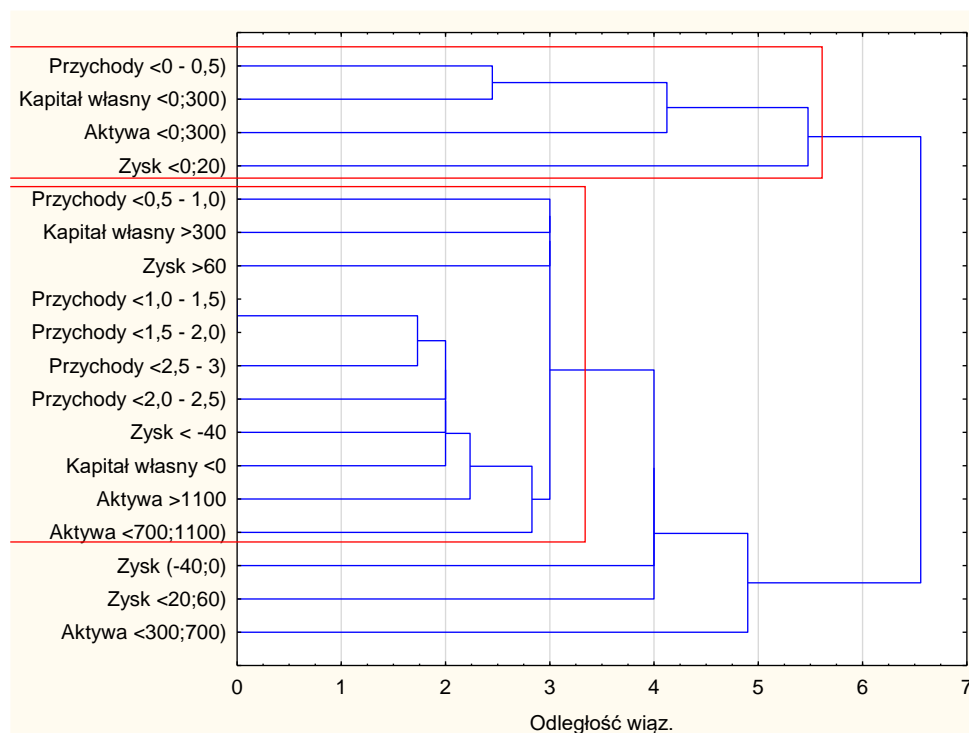
Source: (Own study based on the data Money, money.pl, downloaded: 05.07.2018)

As it is presented in diagram 1, two distinctive groups with different features can be selected in the set of analysed companies. The first of them includes the enterprises with assets below 300 million PLN. This group kept revenue values below 500 million PLN and profit below 20 million PLN. The second group includes two enterprises, i.e. Colian Holding S.A. and Kruszwica S.A. with the assets above 1 billion PLN. The last group includes enterprises with assets between 300 to 1100 million PLN.

Table 2: Values of total assets in the selected years (million PLN).

	Company	Value in 2011 r.	Value in 2017 r.	Average value in the analysed period
Group I.	SEKO SA	96, 468	120, 512	107, 428
	OVOSTAR UNION NV	92, 921	131, 023	116, 514
	KSG AGRO SA	121, 933	59, 030	119, 478
	AGROTON PLC	180, 002	91, 491	127, 764
	MAKARONY POLSKIE SA	142, 157	137, 208	130, 497
	PEPEES SA	156, 607	303, 887	207, 950
	MILKILAND NV	327, 678	160, 415	249, 125
	ZPC OTMUCHÓW SA	278, 561	206, 687	254, 696
Group II.	PAMAPOL SA	501, 319	314, 870	372, 844
	AMBRA SA	398, 725	412, 443	413, 707
	WAWEL SA	378, 200	732, 315	559, 107
Group III.	COLIAN HOLDING SA	868, 733	1 203, 439	1 042, 650
	KRUSZWICA SA	1 307, 490	997, 475	1 086, 444

Source: (Own study based on the data Money, money.pl, downloaded: 05.07.2018)

The selected groups of companies of the analysed index are presented in table 3. The biggest group, containing eight companies, includes enterprises with assets value below 300 million PLN. At the same time this group is the only group that showed the average assets fall by about 23 million PLN during the analysed period. Groups II and III include two and three companies. Both groups showed the average growth of assets value by 60 million and 12 million. In general, it may be concluded that the majority of the WIG-food index companies have fixed assets value at a level to 300 million PLN and attempt to keep it at a stable level.

3. Conclusion

On the basis of the conducted studies the following recommendations and conclusions may be formulated:
1. The WIG-food subindex companies, implementing the adopted strategies that were analysed, achieve good financial results and function in a planned way on the domestic and international markets, as proved by achieved profitability factors.
2. Most of the WIG-food index companies have the capital below 300 million PLN and attempt to keep it at a stable level. The companies Colian Holding S.A. and Kruszwica S.A. had the highest capital in the index of the average value above 1 billion PLN in the analysed period.
3. Despite the fact that some of the companies achieved the decrease of total assets values in the analysed period, which was reflected in the selected years, the development of enterprises should be defined positively. As a consequence this kind of activities resulted in a wide expansion on the worldwide markets.
4. In the process of management and increasing a company competitiveness, the recommendation concerning the use of suitable scenario methods, that can foster the enterprise development significantly, seem necessary.

The study conducted in the analysed WIG-food index enterprises proved the importance of a proper functioning of an enterprise and adaptation to the international requirements and standards in the process of increasing competitiveness and positioning of an enterprise on a local and international market. The strategies adopted by enterprises should contribute to development of profits planned by them, which in the future will be reflected by an achieved market position. Grouping the selected WIG-food index companies according to the criteria adopted in the study enabled to identify the enterprises that characterised by the highest profitability and decreased assets value in the analysed period.

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EFFECTS OF THE EURO CHANGEOVER ON THE INFLATION IN BALTIC STATES

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Abstract. The euro is the official currency of the European Union (EU). All member states excluding Denmark have committed to adopt the euro once they fulfil the necessary conditions, but no timetable is prescribed. Currently 19 of 28 member states use the euro, with Lithuania being the last country that adopted Euro in 2015. Bulgaria, Romania and Croatia aim to become the Eurozone member within several years, while Czech Republic, Hungary and Poland are just considering this possibility. The benefits of euro include stable prices, a more transparent and competitive market, more international trade, lower travel costs, and better access to capital. Residents of any country that has so far adopted the euro were afraid of price increases after the adoption of the euro. In the EU member states that have not adopted the common currency yet, almost two thirds of respondents think that introducing the euro will increase prices in their country. This paper analyses the inflationary changeover effect in Baltic states. The analysis is based on the consumer price indices (CPI) by COICOP divisions. The difference-in-differences method is used where the treated group is Estonia, Latvia and Lithuania, and the control group consists of selected EU member states. Our calculations show that the euro has either insignificant or small effect on consumer prices in evaluated countries.

Keywords: Euro, changeover effect, inflation, consumer price indices, difference-in-differences method

JEL Classification: C32, E31, F36

1. Introduction

The euro is the currency used in 19 of the 28 member states of the European Union. The euro coins and banknotes were introduced on 1 January 2002 in 12 European states: Austria, Belgium, Greece, Netherlands, Finland, France, Germany, Ireland, Italy, Luxembourg, Portugal, and Spain. (Böhm et al., 2016). Seven other states adopted the euro since then: Slovenia in 2007, Malta and Cyprus in 2008, Slovak Republic in 2009, Estonia in 2011, Latvia in 2014, and Lithuania in 2015.

According to European Commission (European Commission A, 2018), there are diverse benefits of euro, including more choice and stable prices for consumers and citizens, greater

security and more opportunities for businesses and markets, improved economic stability and growth, more integrated financial markets, and a stronger presence for the EU in the global economy. Slavov (2008) showed that the adoption of a common currency may also reduce the exchange rate pass-through to domestic consumer prices. Other benefits include stable prices, a more transparent and competitive market, more international trade, lower travel costs, and better access to capital.

Other researchers also study the possible negative effects of euro adoption. Karam et al. (2008) investigate costs and benefits of an emerging economy's abandoning a flexible exchange rate regime in favour of adopting the currency of its main trading partner. Their research concludes, that the monetary union has the benefit of eliminating exchange rate shocks, but the loss of the buffering role of the exchange rate leads to greater volatility in domestic output and inflation. These costs are likely to decline over time, though.

1.1 Euro perspectives

To become a member of Eurozone, candidate state is obliged to fulfil convergence criteria, defined in the Maastricht Treaty (European Central Bank, 2017). The purpose of these rules is to ensure that countries joining the Eurozone are stable in these areas: inflation, levels of public debt, interest rates, and exchange rates. The latest convergence report (European Commission B, 2018) revealed big differences between readiness of the states for euro adoption. While Poland, the Czech Republic, Hungary and Sweden have no plans for a quick accession to the Eurozone, the three remaining states has already presented their strategy in seeking a path to joining it.

The European Union's latest member Croatia currently fulfils three out of the four economic criteria: the criteria relating to price stability, public finances, and long-term interest rates. It doesn't fulfil the exchange rate criterion. Legislation in Croatia is fully compatible with the Maastricht Treaty. Croatia plans to adopt the euro within the next seven to eight years (Morgan, 2018). Bulgaria's preparations for euro adoption are the furthest advanced. It fulfils three out of the four economic criteria: the criteria relating to price stability, public finances, and long-term interest rates. It doesn't fulfil the exchange rate criterion. Although its legislation is not fully compatible with the Maastricht Treaty yet, their currency lev is already bound to the euro. Bulgaria wants to join the exchange-rate mechanism ERM-2 in 2019 (Timu &Vilcu, 2018). The Eurobarometer survey (European Commission C, 2018) shows that euro has the biggest support in Romania, were 69% of respondents are in favour of introducing the euro. Romania's government said that it will present its strategy for euro adoption by the end of the year 2018. Although Romania plans to set the concrete euro adoption date, it requires in-depth analysis, especially of the structural reforms (Timu &Vilcu, 2018), because Romania currently fulfils only one out of four economic criteria necessary for adopting euro, the criteria relating to public finances. Moreover, its legislation is not fully compatible with the Maastricht Treaty.

1.2 Euro changeover effect

After the euro cash changeover in 12 EU countries in 2002, wide discussion started about its effects on both inflation and inflation perceptions. Although economists expected no effect on prices, the consumers perceived the higher increase in prices. In essentially all countries big gap emerged between real inflation measured by the Harmonised Index of Consumer

Prices (HICP) and perceived inflation, as shown in Figure 1. In contrary to these results, most studies on the euro changeover effect revealed only its small inflationary impact – ranging from 0.2% to 0.3% in certain categories.

Figure 1: Inflation perceptions and HICP
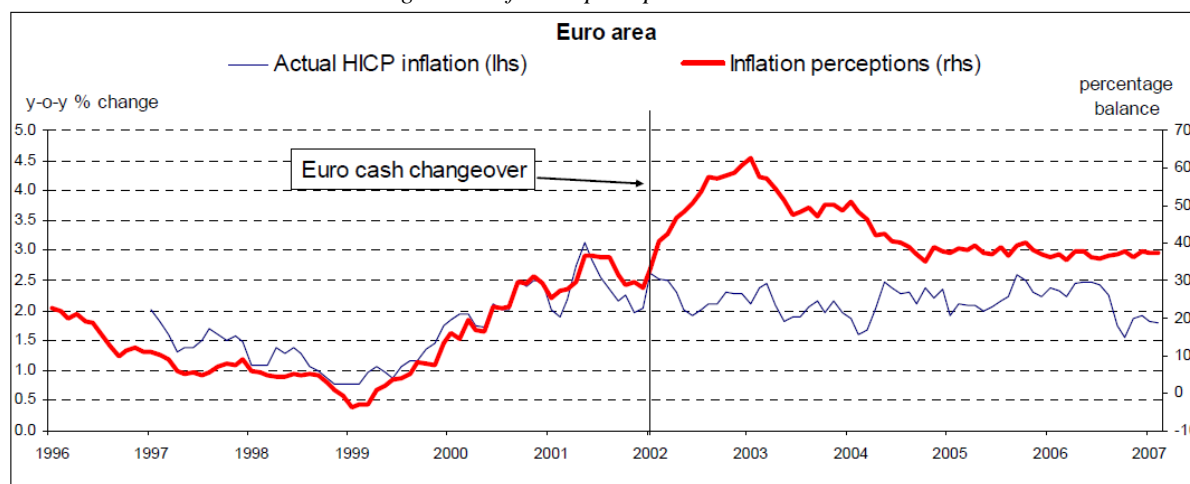
Source: (Dohring & Mordonu, 2007)

Many arguments have been published to explain this difference. Lunn & Duffy (2015) used behavioural analysis that rationalized this fact by the difficulty of using new currency. Moreover, Dziuda & Mastrobuoni (2009) developed a model of imperfect information, in which cheaper goods experience higher price growth after the changeover, and simultaneously consumers pay more attention to frequently purchased cheaper items.

In several studies small euro changeover effect was revealed. In Slovenia, unusual price rises were detected in restaurants, bars and coffee shops, as well as in personal services, footwear services, repair of household appliances, repair services and transport services. Based on this information, Eurostat estimated the total impact of the changeover on price inflation 0.3%, while the Institute of Macroeconomic Analysis and Development of Slovenia amounted the total effect on the CPI to 0.24% (Kohek & Macek-Kenk, 2007). Meriküll & Rõõm (2014) found out that in Estonia the total changeover-related inflation was 0.39%, but differed substantially across market segments. They showed that cheaper products experienced higher changeover related inflation and that the changeover effect was strongest in smaller shops. Macchiarelli (2013) analysed inflation and GDP dynamics for 10 EU countries (Poland, Hungary, Czech Republic, Latvia, Lithuania, Bulgaria, Romania, Slovenia, Slovakia and Estonia) and the euro area. Inflation convergence in the new EU member states from Central and Eastern Europe also studied Spiru (2009) with conclusion that after the inception of the single currency a proliferating inflation divergence has been observable. Franta, et al., (2010) showed that inflation persistence is not an issue for all of the new member states, though. Bulgaria, Cyprus, the Czech Republic, Malta, Romania, and Slovakia exhibit levels similar to levels in other euro area countries, while Estonia, Hungary, Latvia, Lithuania, Poland, and Slovenia encounter a problem with high inflation persistence.

2. Methods

To estimate the effect of euro changeover on inflation in three Baltic states (Estonia, Latvia and Lithuania), we applied the difference-in-differences (DiD) method. It is frequently used for evaluation of inflationary changes. Otrachshenko et al. (2016) use the difference-in-differences approach for comparison of individual levels of satisfaction with the economy in Slovakia immediately before and after the introduction of the euro. Wunder et al. (2008) applied a parametric difference-in-differences approach to assess the real effects of the introduction of the euro on subjective well-being in British and German households. Miles (2008) uses DiD method in a set of emerging markets and examines the impact of exchange rates on inflation and production. Analysis of differences-in-differences based on French restaurant micro-data (Eife et al., 2012) strongly supports the prediction that prices during the euro changeover in the European Monetary Union in 2002 were less likely to increase in larger restaurants and non-tourists restaurants.

2.1 Difference-in-differences

In the simplest version of difference-in-differences method, data is divided into two groups and two time periods. The group under investigation is called treatment group, the second group is control group. In our study we applied three different analyses. In each analysis, one state under evaluation forms treatment group while remaining 21 states form the control group. In the first analysis Estonia that adopted euro in 2011 is treated country. In the second analysis Latvia that adopted euro in 2014 is treated country and in the third analysis Lithuania is treated country (adopted the euro in 2015). In all three cases, we evaluated the period 24 months before and 24 months after euro adoption.

The proposed difference-in-differences approach includes macro level control variable unemployment rate with up to three lags. We assume that unemployment was not affected by the changeover to the euro so we take it as a suitable control for the analysis. The regression formula for DiD method is:

$$I_{it} = \beta_0 + \beta_1 \cdot dB + \beta_2 \cdot d2 + \beta_3 \cdot d2 \cdot dB + \sum_{k=1}^{3} \beta_{4,k} \cdot \Delta U_{c,t-k} + \tau_t + \varepsilon \qquad (1)$$

I_{it} is outcome of interest, monthly inflation in evaluated state. Dummy variable dB captures differences between two groups before the euro adoption, $d2$ is a dummy variable for the time period after the euro adoption, ΔU_c is the change of the monthly unemployment rate in country c and dummy variable τ_t indicates time trend. The coefficient that characterizes the euro changeover effect is β_3, which corresponds to dummy variable that is zero in all cases expect for the observations in the treatment country after euro adoption; in this case it is one.

2.2 Data

In our research we investigated if prices in Baltic states increased after they became members of Eurozone. We compared the inflation in Estonia, Latvia and Lithuania with other selected states. DiD method requires that the dependant variable follows similar trends for both treatment and control group. For control group we have chosen member states of European Union which are also members of OECD. We compared their moving 12 month average rate of inflation change (as suggested in Merikull & Room, 2014) and it followed

similar trends in given periods. Due to a lack of data, Finland and Sweden were removed from analysis, though, so these 19 states were included in the analysis: Austria, Belgium, Czech Republic, Denmark, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, and United Kingdom.

Since HICP may not catch the changes in the separate sections of the consumer basket, the dependant variable in DiD model is consumer price index (CPI), which measures changes in the price level of market basket in twelve separate sections, as shown in Table 1. Data was collected from OECD database (OECD, 2018).

Table1: CPI sections

CPI: 01	Food and non-alcoholic beverages	CPI: 07	Transport
CPI: 02	Alcoholic beverages, tobacco and narcotics	CPI: 08	Communication
CPI: 03	Clothing and footwear	CPI: 09	Recreation and culture
CPI: 04	Housing, water, electricity, gas and other fuels	CPI: 10	Education
CPI: 05	Furnishings, household equipment, maintenance	CPI: 11	Restaurants and hotels
CPI: 06	Health	CPI: 12	Other

Source: (OECD database)

We performed 13 analyses for each evaluated country, one for total CPI data and remaining 12 for each CPI section. This way we were able to obtain detailed information what sections of consumer basket were affected by euro adoption.

Unemployment rate was used as an independent variable to take dynamics for the business cycles into account. We used monthly rate of change of seasonally adjusted unemployment rate, taken from the Eurostat database (Eurostat, 2018).

3. Results

The results of the DiD method for the Baltic states Lithuania, Latvia and Estonia are shown in Table 2. Our calculations show that the euro has only small effect on consumer prices in evaluated countries.

In Estonia, only prices in restaurants and hotels (section CPI-11) increased significantly higher over the prices in countries in control group. Our calculations show that the prices in group CPI-03: clothing and footwear increased significantly more slowly (at the level of significance 0.039) than in control group. Other differences between Estonia and control group are not statistically significant.

The progress of inflation in Latvia differed significantly from states in the control group after euro adoption in 2014. Overall prices increased in Latvia at the 0.001 level of significance. Prices in groups CPI-03: Clothing and footwear and CPI-05: Furnishing, household equipment, maintenance increased significantly over the prices in the control group at the level of significance less than 0.001. Statistically significant bigger inflation was identified in CPI-07: Transport (level of significance 0.089) and CPI-09: Recreation and culture (level of significance 0.041). On the other hand, we also found 3 CPI sections with

statistically significant negative effect on the level of inflation: CPI-01: Food and non-alcoholic beverages, CPI-02: Alcoholic beverages, tobacco, narcotics, CPI-12: Other.

Table2: Results of DiD analysis

		CPI groups											
	Total	01	02	03	04	05	06	07	08	09	10	11	12
Estonia	-0.050	0.283	0.375	-3.630	0.0814	-0.397	0.214	0.097	0.162	0.230	-0.301	0.374	0.019
	0.749	0.236	0.236	0.039**	0.757	0.149	0.388	0.754	0.514	0.434	0.290	0.083*	0.899
Latvia	0.465	-0.007	-0.546	8.794	0.080	1.041	0.047	0.577	-0.109	0.588	-0.107	0.173	-0.709
	0.002***	0.000***	0.015**	0.000***	0.706	0.000***	0.807	0.089*	0.677	0.041**	0.791	0.393	0.000***
Lithuania	-0.468	0.115	0.215	-6.519	0.004	-0.536	0.010	0.199	-0.177	-0.181	-0.115	0.049	-0.182
	0.001***	0.565	0.343	0.001***	0.985	0.059*	0.9589	0.557	0.500	0.530	0.7765	0.809	0.290

Source: (*own calculations*)

*Legend: Significance codes: *** p<0.001, ** p< 0.05, * p<0.1*

For the last state that adopted euro so far, Lithuania, we identified statistically significant negative effect of the euro introduction on the total level of inflation (level of significance 0.001). It was caused by two CPI sections, CPI-03: Clothing and footwear and CPI-05: Furnishing, household equipment, maintenance.

4. Conclusion

This paper analyses the inflationary changeover effect in the Baltic states. The analysis is based on the 12 sections of consumer price indices. The difference-in-differences method is used where the treated group is Estonia, Latvia and Lithuania, and the control group consists of selected EU member states. The euro introduction has only small effect on consumer prices in evaluated countries.

We were not able to identify common patterns in the euro changeover effect in three evaluated Baltic states. After euro adoption in Estonia inflation increased significantly over control group states only in section CPI-11: Restaurants and hotels. For Lithuania we didn't find any CPI section with statistically significant difference from states in control group. However; in Latvia after euro adoption in 2014, prices increased significantly faster than in control group states in four CPI sections.

Our calculations show that the inflation in Estonia and Lithuania was not different from control group, but we observed 0.465% price increase in Latvia.

The Eurobarometer survey (European Commission C, 2018) says that just over half (51%) of respondents in 7 states that have not yet adopted the euro are in favour of introducing the euro. Regarding this survey, the respondents who feel informed about the euro are more likely to support its introduction compared to those who do not feel informed. One of the reasons may be the fact that the perceived inflation in states that already adopted euro is still higher than real inflation. However, our calculations support the previous studies that conclude that there is only small euro changeover effect on inflation, usually only in selected sections of consumer basket.

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GLOBAL APPROACH TO THE PROPOSAL OF METHODOLOGY FOR MOTIVATING AND ACTIVATING STUDENTS TOWARDS LEARNING

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Abstract. On a global scale, motivation is seen as one of the important factors affecting the effectiveness of student learning. (Veena & Shailaja, 2013) Psychological studies refer to significant differences in student motivation and to the resulting differences in the learning process. Each mental process has its individual development with a particular individual. Therefore, gifted pupils learn fast and better, they achieve the expected results sooner than less talented pupils. The proper motivation for learning, the environment in which a child grows, and the heredity factor also play an important role. Synchronizing individual motives of students with factors that affect the entire society leads educators to their better knowledge and to an adequate stimulation that can fulfill their personal ambitions and social goals. This aspect requires the teacher to have a high degree of professionalism and pedagogical "mastery". In the case of teaching process, the teacher is expected to be able to combine the adopted theoretical knowledge with practice, which is not insignificant for students, but on the other hand, it corresponds with their motives.

Keywords: students, motivation, activation, methodology, factors

JEL Classification: I25, M50, A20

1. Introduction

Paskova (2008) suggests that the "performance motivation is inextricably linked to the issues of general motivation" [the authors' translation]. The greatest task of psychology is and will be concerned with providing explanations as to why people behave as they do. (Nakonecny, 1996)

The individual learning traits in students are particularly manifested in:
- the pace of learning;
- the way of remembering;
- the interest to study and in relation to learning;
- the way of studying and dealing with problems;
- performance level.

The stated differences in the knowledge acquisition are mainly due to differences in abilities of the student. (Declercq & Verboven, 2018; Verhaest et al., 2018; Safrankova & Sikyr, 2018) Therefore, gifted students learn faster and better and achieve the expected results sooner than less talented students. The proper motivation for learning, the environment in which a child grows, and the hereditary factor also present important elements. (Aljaffery, 2016; Ruzek et al., 2016; Peterson et al., 2016; Blanchard & Olney, 2017)

The most important motivational factors for learning for students are aspects such as interest, rewards and sanctions, the recognition of their results and the tendency to complete their activities.

Following the concept proposed by Richard de Charms (Zelina, 1995), the process of increasing motivation takes into account the following aspects:
- a person must be guided to a careful consideration of his/ her basic motives, in a pleasant atmosphere where the personality is respected and acknowledged;
- the environment is supposed to contribute to the person´s ability to transfer his/ her motives to short and long-term planning of objectives;
- the environment is intended to contribute to the planning a specific and at the same time, realistic activity aimed at achieving the objectives;
- the environment is supposed to help a person to learn to take responsibility for the selected goals (Bandura, 2011), activities, as well as for success or for the failure in the process of achieving these objectives, respectively.

Synchronizing students' individual motives with the social ones guides teachers to their better knowledge and to an adequate form of stimulation in order to meet their personal ambitions and social goals. (Dizon-Ross, 2018; Reyes, 2018) This requires the teacher to have a high degree of professionalism and pedagogical "mastery". (Ballou, 1996) In the case of teaching of economic subjects, the teacher is expected to be able to combine theoretical knowledge with practice that is not unattractive for students; rather, it corresponds to their motives. (Hanushek et al., 2018)

2. A Proposal of Methodology for the Evaluation of Students' Activation and Motivation

In order to find out the activation and motivation of students in the teaching process of economic subjects, the questionnaire provides the best option for adapting to students and for obtaining responses with high significance. On the basis of theoretical knowledge (Aljaffery, 2016; Hill & Jones, 2018; Ruzek et al., 2016; Peterson et al., 2016; Elliot & Church, 1997; Richardson & Abraham, 2009; Veena & Shailaja, 2013; Massenberg et al., 2017; Nguyen, 2017) the factors of motivation (Parker, Bindl & Strauss, 2010; Hanushek et al., 2017) and the activization of students in lessons of economic subjects have been proposed.

The external and internal motivation factors are then assigned points from 0 to 10, with the value of zero indicating that a factor does not have any effect on the motivation and activation of the student. On the other hand, the value of 10 significantly affects the students' motivation in the lessons of economic subjects. (O'Leary, 1940) Depending on demotivational factors, the value of points is different, indicating that the value of 0 means that the factor does not have any effect on the student's demotivation and the value of 10 that it demotivates him/ her to great degree. The respective factors are grouped into the respective areas:

A. External motivational factors include the following:

- Good grades.
- Teachers' praising of students.
- Interesting, interest-holding explanations of teachers on lessons.
- Theory discussed in lessons is linked to practical examples.
- Teachers assess not only the outcome but also the student's progress (or effort) with regards to the work which is performed.
- Teachers support students' autonomy and creativity (solving individual problems, helping classmates, working relationship).
- Teachers assign individualized tasks that take into account the specificity of the students (some people may be considered practitioners and some theoreticians).
- Teachers support the intrinsic value of pupils (they give credit and reward more than they criticize).
- Friendly atmosphere in the classroom (good interpersonal relations between classmates and teachers; see Leuven and Løkken 2018).
- Suitable environment in the classroom (quiet environment, temperature, cleanliness).

B. Internal motivational factors are listed as follows:

- Respect and recognition among classmates.
- Respect and recognition among teachers.
- Responsibility for achieving objectives, activities and tasks in lessons.
- The ability to develop creative abilities in lessons.
- Interest in the field of study.

C. Demotivational factors include the following:

- Anxiety (or fear) from a previous failure.
- Cold in class, classroom noise, hunger.
- Exhaustion and excessive stress from preparation for the lesson.
- Fear of teachers (either of their personality or of the nature and behavior towards students in the lessons).
- Unkind class atmosphere (bad interpersonal relationships among classmates).
- Concerns about possible failure.
- Poor grades.
- Tedious process of explanation of teachers in the lessons.

The selection of the research sample

The basic set is determined from the registry of the students of the final grades of the given study programme at the selected school for the year that is monitored. The survey is anonymous and its completion is voluntary. We recommend a sample size (a basic file) with a probability of 95 % and a variance of 5 %.

Distribution, collection and transfer of questionnaire data

In terms of the method, it is correct and effective to provide the student with a questionnaire on the day that the evaluation is complete, together with the instructions for the submission of the completed questionnaire, which should ensure anonymity. For the process of processing data, it is necessary to identify an employee who meets the data requirements

for the qualification and material equipment such as software, computer, printer, or the Internet connection.

The Interpretation and Publication of Results

As regards the interpretation of the processed data, it should be a person who transfers the evaluated data in the form of outputs on the basis of the purpose of use. It can also be the same person as the one who processes the data. The outputs can take the form which is presented in Table 1.

Table 1: The Use of Information from a Pedagogical Survey

The Purpose of Use	The Form of Presentation of Results	Publication of Results	Frequency of Publication
Increasing motivation and activation of students at school	Written document, in an electronic form	Internal materials of the school	Annually
	Written document, Presentation Web page	A record from a meeting	Continually, taking corrective measures

Source: (The authors´ processing)

A person or a number of people who are familiar with the topic should be in charge of the interpretation of results. These experts can process data in a manner that is clear, legible and comprehensible for individual entities that make use of the results of the satisfaction assessment. It requires knowledge of the database work, graphic display of results and interpretative knowledge. The process of identifying responsible persons and training is an important phase of the whole survey.

The implementation of the survey requires the identification of people who are responsible for the following activities:

- The distribution of questionnaires.
- Instruction on completing and submitting questionnaires.
- Collecting questionnaires from the place marked for the submission of the questionnaire.
- Control of questionnaires and electronic transfer of the data.
- Data processing.
- The interpretation and publication of results.

3. Empirical part – pedagogical survey

The proposed methodology for measuring activation and motivation of students was applied to students of the selected secondary vocational school. The questionnaire was completed by the students of the last grades in January 2017 in the lessons of economic subjects. The return rate of questionnaires was 96 % (there were 98 completed questionnaires).

3.1 Results and Discussion

The results of the pedagogical survey indicate that 39.80 % of the students chose the given school because they are interested in their area of study and intend to devote their activities to it in the future. Another reason that most significantly influenced the choice of the school (Muralidharan and Sundararaman 2015) was concerned with positive family and familiar recommendations (36.73 %). The least significant factor for choosing a respective school was that the students were not admitted anywhere else.

The students' access to studies at the given school is also positively evaluated. Most students (76.53 %) approach the study in a responsible way; they study for their benefit and for their own conviction. Also, the studies are oriented for the students' own benefit (related to the future).

The Evaluation of External Motivational Factors

The following elements are classified among external motivational factors that influence students to the greatest degree at given school: good grades (6.94 points), an interesting, interest-holding explanations of teachers in the lessons (6.93 points) and also a pleasant atmosphere in class, such as good interpersonal relationships among classmates and teachers.

The Assessment of Internal Motivation Factors

On the basis of recent knowledge, internal motivation factors are those that most influence the motivation of students and their interest in studies. All the internal motivational factors have reached an average value above the average (5 points), i.e. all the above mentioned factors influence the students to great degree. Most of the aforementioned factors motivate the students who are interested in them and also have important respect and recognition among teachers.

Demotivational Factors

The most disabling factors in economic subjects include: uninteresting, boring interpretation of teachers (6.18 points), physiological factors such as cold in the classroom, noise and the feeling of hunger (5.35 points) and exhaustion and excessive stress from preparations for a lesson (5.31 points).

3.2 Proposals and Recommendations

Based on the results of the pedagogical survey, the following is recommended to teachers at school in order to increase the activation and motivation of students:
- Rigorous teacher training for lessons (frequent inspections of lessons, checking the preparation of lessons by the headmaster/ deputy headmaster).
- The use of innovative methods in lessons (didactic games, discussion methods. situational methods, heuristic methods, problem solving, project methods; see Jerrim, Macmillan, Micklewright, Sawtell and Wiggins 2018).
- To create a friendly atmosphere among students and teachers.
- To create opportunities for teachers to give credit to each student. It is vital to provide more reward for students than criticism.
- In order to increase the activation of students, to employ more demanding and less demanding curriculum. Also, it is vital to assign extra tasks to more clever students.

4. Conclusion

From the external motivational factors that have been discussed, the following have an optimal impact on students' grades - an interesting, interest-holding explanations of teachers in the lessons, and also a pleasant atmosphere in the classroom, such as good interpersonal relations between classmates and teachers.

According to recent knowledge, internal motivation factors are classified among the factors that most influence the motivation of students and their interest in learning. All the assessed internal motivation factors reached the average value above the average. Most of the aforementioned factors motivate students who are interested in them and also have important respect and recognition among teachers.

As the most demotivating factors, students noticed a lack of interest, boring teachers, there were physiological factors involved, such as cold in the classroom, noise, hunger and exhaustion as well as an excessive amount of stress from the preparation for the classes. The school should adequately respond to the present-day situation which is rapidly changing. In teaching process, more and more emphasis is being placed on changing the interaction between the teacher and the student. The problem, however, is that activation of a student to work independently cannot be achieved by fulfilling certain standards, commands or prohibitions, but by stimulating, encouraging, assigning problem solving tasks, patterns and similar solutions.

The teacher should know himself/herself and should also know how to create a favorable atmosphere in the learning process, how to motivate students to use the means in order to raise interest in the subject. Each activity is usually motivated by several topics. Teachers, however, often focus on the external motivation which they prefer to internal motivation and this is negatively reflected in the student's interest in school activity.

Acknowledgment

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SUSTAINABLE DEVELOPMENT OF TOURISM: TRANSITION FROM GLOBAL TO LOCAL DIMENSION

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Abstract. Sustained growth in tourism has been instrumental in supporting the economic recovery of many European countries, largely contributing to job creation, GDP and the balance of payments. Today, tourism is one of the key pillars of the EU strategy for jobs and inclusive growth. The harnessing of tourism positive contribution to sustainable development and the mitigation of the sectoral potential adverse effects call for strong partnerships and decisive action by all tourism stakeholders in line with the 2030 Agenda for Sustainable Development. Countries lack frameworks to capture, aggregate and report on the full economic, social and environmental impacts of tourism. In Slovakia, tourism destinations play a more significant role in achieving the goals of sustainable development, they must be able to measure their progress, benchmark themselves against comparable destinations and incrementally improve their performance. The aim of the article is to examine the frameworks to measure the role of tourism in sustainable development and its possible transition from global to local level. Sustainable development of tourism is most commonly measured using the indicators of sustainable development. To analyse the application of frameworks to measure the role of tourism, the Delphi method is used which relies on a panel of experts. The article deals with the framework for measuring sustainable development of tourism using indicators and its possible application in Slovak destinations.

Keywords: globalisation, sustainable development of tourism, tourism destination, indicators of sustainable tourism development

JEL Classification: L83, Q01, Z32

1. Introduction

Tourism is the third largest economy in the world (UNWTO, 2018). This industry is economically important due to its generating activities and, hence, increased direct and indirect employment opportunities. In addition, there are social benefits to both tourists and residents, and the movement of tourists contributes to cultural exchange (Lozano-Oyola et al., 2012).

However, the effect of tourism on the environment remains challenging (Scholz, 2016). In fact, the carrying capacity of several tourist destinations has been exceeded in recent years.

As a result, more emphasis has been placed on improving the sustainability of these destinations.

Sustainable tourism is as such not a specific form of tourism but more an approach that can be used to make all types of tourism more environmentally, socially and economically beneficial (Blancas et al., 2015). Globally, several world-leading organisations have put sustainable tourism on their agenda, such as the United Nations World Tourism Organisation (UNWTO) or the Global Sustainable Tourism Council (GSTC). Both aim at contributing to the objectives of the United Nations 2030 Agenda for Sustainable Development.

In this context, the UNWTO (1996) established the need to manage the destinations to obtain long-term sustainable tourism. In this sense, the systems of sustainable tourism indicators are a tool for the evaluation of the degree of sustainability of a destination from a multidimensional perspective. Sustainability indicators are established tools for assessing and monitoring sustainable development strategies. As such, sustainability indicators can lead to better decisions and more effective actions by simplifying, clarifying and aggregating the information available to policy-makers while also communicating the ideas, thoughts and values of different stakeholder groups. Indicators of sustainable tourism can be defined as "the set of measures that provide the necessary information to better understand the links between the impact of tourism on the cultural and natural setting in which this takes place and on which it is strongly dependent (UNWTO, 1996).

Within tourism studies, numerous researchers emphasize that indicators are crucial for identifying and monitoring sustainable development of tourism (e.g. McCool et al., 2001; Miller & Twining-Ward, 2005; Choi & Sirakaya, 2006; Castellani & Sala, 2010; Blancas et al., 2011, 2015).

Scholarly interest in this subject coincided with the World Tourism Organization's promotion of indicators of sustainable tourism, starting with the publication of its first set of indicators in 1996 (UNWTO, 1996). These indicators were considered the first highly developed tools for operationalization of sustainable development in any tourism destination context. Still, countries lack frameworks to capture, aggregate and report on the full economic, social and environmental impacts of tourism. In Slovakia, tourism destinations to play a more significant role in achieving the goals of sustainable development, they must be able to measure their progress, benchmark themselves against comparable destinations and incrementally improve their performance.

2. Methods

The aim of the article is to examine the frameworks for measuring tourism role in sustainable development and its possible transition from global to local level. Sustainable development of tourism is most commonly measured using the indicators of sustainable development. In order to get an impression of which indicators that tends to be used, we conduct literature-based research and comparative analyses. To analyses the application of frameworks for measuring tourism role, the Delphi method is used which relies on a panel of experts. The Delphi technique is described by Miller & Twining-Ward (2005) as a unique method of eliciting and refining group judgement based on the rationale that a group of experts is better than one expert when exact knowledge is not available. In tourism-related

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studies, the Delphi method has been used for the selection of indicators by several authors, e. g. Choi & Sirakaya (2006).

The expert panel members were selected based on their expertise and experience in the subject area from three disciplines, namely public sector (Minister of Transport and Construction of the Slovak Republic – Tourism section; Ministry of Environment of SR), academics (e.g. Faculty of Economics Matej Bel University; Faculty of Economics and Administration Masaryk University; Slovak University of Agriculture in Nitra) and destination management organizations (Central Slovakia, Visit Bratislava, Banská Štiavnica DMO).

The sample of 21 experts was taken from those who had experiences with issue. The first round achieved 71% response rate (15 responses). The respondents were presented with indicators of sustainable tourism development for consideration and to express their importance and application in sustainable tourism development of Slovak destinations. This research forms part of a wider project to develop system of indicators that Slovak destinations can use and assess sustainable development of tourism.

3. Results

Several indicator systems have been designed by different institutions to provide quantitative and qualitative measures to assess and study the interrelation between tourism and sustainable development at different territorial levels.

3.1 Frameworks for evaluating sustainable tourism development

There have been numerous approaches developed for monitoring system as a part of specific research project for definable destinations or for specific major tourism issue (Table1).

Important issues that need to be addressed relate to the three core issues, namely community, tourism and conservation. Each of these issues could be linked to the triple bottom line of sustainability, namely social, economic and environmental sustainability, or otherwise stated as people, profit and planet. Community links to social sustainability, tourism links to the economic sustainability and conservation links to environmental sustainability (Mearns, 2015).

Selected approaches categorize indicators into three key areas of sustainable development, respectively distinguish between social and cultural dimensions. Some authors also include other dimensions (technological, political), or apply a different classification (e.g. driving forces, pressures, state, responses). Their content, however, in most cases matches with the basic dimensions. The choice of indicators depends on for who is the intended system and who should be entrusted with its collection and interpretation.

Table 1: Sets of indicators for evaluating sustainable tourism development

Author (organization)	Year	Dimension/Issue	No
UNWTO	1998	10 Basic Dimensions	10
McCool et al.	2001	National, Regional, Local	26
UNWTO	2004	13 Dimensions of Sustainable Tourism Development	768
Choi & Sirakaya	2006	Economic, Social, Cultural, Ecological, Political, Technological	125
Pulido & Sanchez	2009	Driving Forces, Pressures, State, Responses	14
Castellani & Sala	2010	Population, Housing, Services, Economy and Labour, Environment, Tourism	20
Blancas et al.	2011	Economic, Environmental, Socio-Cultural	77
Lozano-Oyola et al.	2012	Economic, Environmental, Socio-Cultural	85
Simkova & Rybova	2012	Economic, Social, Cultural, Ecological, Political, Technological	45
European Commission	2013	Economic Value, Environmental Impact, Social and Cultural Impact, Destination Management*	67
Global Sustainable Tourism Council	2013	Sustainable Destination Management, Economic Benefits, Benefits to Communities, Visitors, and Culture, Benefits to the Environment	105
Margina & Partal	2013	Economic, Environmental, Socio-Cultural, Political	32
Tanguay et al.	2013	Comparation Of Most Used Indicators	27
Torres-Delgado et al.	2014	Economic, Environmental, Socio-Cultural	26
Blancas et al.	2015	Economic, Environmental, Socio-Cultural	89
Bulatovic & Rajovic	2015	Economic, Environmental, Social, Crosscutting	34
Jurigova & Lencsesova	2015	Economic, Environmental, Socio-Cultural	77
Mearns	2015	Economic, Environmental, Social, Crosscutting	34
Romao & Neuts	2017	Territorial Capital, Tourism Specialization, Tourism Performance, Sustainable Regional Development	11
Ministry of Environment of SR	Annually	Tourism Trends Related to the Environment, Interaction of Tourism with the Environment, Political, Economic and Social Aspects of Tourism	12

* ETIS is based on 27 core and 40 optional indicators.

Source: UNWTO (1998, 2004), McCool et al. (2001); Choi & Sirakaya (2006); Pulido & Sanchez (2009); Castellani & Sala (2010); Blancas et al. (2011, 2015); Lozano-Oyola et al. (2012), Simkova & Rybova (2012); European Commission (2013); Global Sustainable Tourism Council (2013); Margina & Partal (2013); Tanguay et al. (2013); Torres-Delgado et al. (2014); Bulatovic & Rajovic (2015); Jurigova & Lencsesova (2015); Mearns (2015); Romao & Neuts (2017); Enviroportál (2018).

Based on evaluated frameworks, the following set of indicators for measuring sustainable tourism development was proposed (Table 2).

The indicators were select based on frequency of use and possible application (or measurability) in Slovak destinations. The frequency of use is a criterion that allows us to identify well-documented indicators whose relevance has been demonstrated, both for its value and for its effectiveness (Tanguay et al., 2013). Not applicable indicators included those, which are relevant to a specific destination (e. g. coastal destinations) or because they did not meet the condition of measurability. However, many of these indicators are not calculated for a specific tourist destination, but generally. There are also indicators for which the calculation concerns areas that are not necessarily compatible with the administrative territorial division.

Table 2: Set of indicators for evaluating sustainable tourism development

Indicator	Code
Economic Dimension	
Number of tourist nights per year in destination	I1
Average length of stay of tourists (nights)	I2
Average occupancy rate in commercial accommodation	I3
Daily spending per visitor (including accommodation, meals and other services)	I4
Average price for accommodation	I5
Direct tourism employment as percentage of total employment in the destination	I6
The percentage of seasonal employees in tourism enterprises	I7
The percentage of tourism enterprises that prefers products from regional suppliers	I8
Existence of a development plan, which includes tourism	I9
Direct promotion of tourism development from public resources	I10
Environmental Dimension	
The percentage of tourists using a passenger car to transport to the destination	I11
The percentage of tourists using a passenger car to transport throughout the destination	I12
The percentage of tourism enterprises, which have introduced actions to reduce waste production (e.g. recycling, composting, re-use of waste)	I13
The percentage of tourism enterprises that have introduced actions to reduce water consumption (e.g. reduce water flow)	I14
The percentage of tourism enterprises that have introduced actions to reduce energy consumption (e.g. low energy lighting)	I15
The percentage of tourism enterprises actively involved in protecting and enhancing the natural environment in the destination (e.g. visitor education, organization of waste collection events)	I16
The share of protected areas on the area of the destination	I17
Quality of water in the destination's natural swimming pools	I18
Socio-Cultural Dimension	
Number of tourists/visitors per 1 000 residents	I19
Tourists' satisfaction rate with tourist development in the destination	I20
Residents' satisfaction rate with tourist development in the destination	I21
The percentage of tourists who prefer regional products while staying in destination	I22
The percentage of tourism enterprises and attractions that are tailored to disadvantaged visitors	I23
The percentage of tourism enterprises that actively promote local traditions and customs	I24
The percentage of tourism enterprises and attractions that are members of localDMO	I25

Source: (the authors)

There is also no ideal number of indicators to use. Any attempt to address all the aspects of sustainability using too few indicators would leave important gaps, while selecting too many indicators in turn could overwhelm users and the collection of data could become too complex and time-consuming. According to the UNWTO (2004) most practitioners agree that it is essential to prioritize issues and the indicators that correspond to them, to help create a shorter list (12 to 24 indicators are optimal).

3.2 Evaluating sustainable tourism development framework

The panel members were asked to evaluate the importance of proposed indicators on Likert scale from 1 to 5, where 1 means the least important and 5 the most important indicator. To process the responses, the measures of central tendency were used using Excel software. The mode is the value of indicator' importance that occurs most often. Standard deviation shows to what extent the individual measured values are around the mean value. The smaller the standard deviation, the closer the values around the mean value are measured.

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The summaries from the Delphi study are shown in Table 3 along with their mode scores and standard deviation.

Table 3: Results of Delphi method

Indicator	Mode	Std.ev	Indicator	Mode	Std.ev	Indicator	Mode	Std.ev	Indicator	Mode	Std.ev
I1	5	1,16	I8	5	0,45	I15	5	0,49	I22	4	0,99
I2	4	0,99	I9	5	1,41	I16	5	0,73	I23	3	1,29
I3	5	0,70	I10	1	1,60	I17	5	1,68	I24	5	0,73
I4	4	1,18	I11	5	1,12	I18	5	1,50	I25	4	1,25
I5	2	1,03	I12	5	0,73	I19	5	1,16			
I6	4	1,28	I13	5	0,73	I20	2	1,48			
I7	4	0,73	I14	5	0,49	I21	5	0,35			

Source: (the authors)

In the economic dimension, two indicators (I10 - Direct promotion of tourism development from public resources, and I5 – Average price for accommodation) have the value of importance lower than 3 (Mode). From environmental dimension, the panel members favored each of proposed indicators (I11 – I18) with most often value of importance 5. In the social dimension, one indicator (I20 - Tourists' satisfaction rate with tourist development in the destination) was identified as a less important (value 2). The standard deviation was highest for I17 (The share of protected areas on the area of the destination), I10 (Direct promotion of tourism development from public resources), I9 (Existence of a development plan, which includes tourism) and I6 (Direct tourism employment as percentage of total employment in the destination).

4. Conclusion

World leaders in sustainability assessment, the United Nations and the World Tourism Organization, emphasize the need for frameworks to capture, aggregate and report on the full economic, social and environmental impacts of tourism on destination development. Sustainability indicators are established tools for assessing and monitoring sustainable development strategies.

The aim of the article was to examine the frameworks for measuring tourism role in sustainable development and its possible transition from global to local level. This paper has sought to determine expert opinion on the importance of the indicators and their application in Slovak destination.

The research has identified several approaches developed for monitoring system related sustainable tourism development indicators at different territorial level. Most authors, base their assessments of tourism sustainable indicators on the prominent three-pillar framework, encompassing an economic, environmental and social/socio-cultural dimension or otherwise stated as people, profit and planet.

Based on evaluated frameworks, the set of indicators for measuring sustainable tourism development in Slovak destination was proposed which reflect triple-bottom line of sustainable development. To analyses the framework for measuring sustainable tourism, the Delphi method was used. The Delphi study data was entered and analyzed using Excel software.

The selection of the relevant indicators has to be a flexible process, which needed be appropriate to the peculiarities of each destination (e. g. data available, management of destination).

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A NEW GLOBAL TREND IN PROGNOSIS OF ECONOMIC DEVELOPMENT: FUZZY APPROACH TO THE ESTIMATION OF GDP GROWTH RATE

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Abstract. The main global economic theories, which are neo-classicists and Keynesians, analyse the problem of product growth from different points of view. Both schools utilize statistical models for the purpose of the prediction of the real product (GDP) development. This article aims to predict the GDP short-term growth rate by means of a non-traditional model in the field of macroeconomic analysis – the fuzzy approach. The essence and principles of the fuzzy approach are first described generally in the methodological part and specifically in the context of the problem of the prediction of the GDP growth rate. The practical illustration of the growth rate prediction for the Czech Republic in the years 2018 and 2020 follows. This is based on the components of the previous four-year evolution of the selected three macroeconomic indicators, which are the long-term interest rates, investment and unemployment that are the input parameters of the task. These inputs are processed by means of the algorithm based on the fuzzy approach that allows capturing the uncertainty and complexity of vague socio-economic factors occurring in the real economy. The results achieved correspond with the official statistical predictions largely. The performed procedure sets a new global trend in the possibility of the prediction of macroeconomic indicators.

Keywords: GDP prediction, fuzzy approach, interest rates, unemployment, investments

JEL Classification: C53, E17, O11

1. Introduction

Economic growth, in the sense of a short-term increase in real product, alternating by a decline in the product, is the growth within the cyclical fluctuations of the economy. Both the factors influencing its development externally, such as the state of economic and political situation abroad, and the internal factors of the „well-established" economic policy are the significant stimuli of growth. Different economic schools deal with prediction of product development. The main streams include the neoclassical direction, which describes the dependence of product growth on the growth of capital associated with postponing current consumption and accompanied by saving cumulating (Kuipers, 1981) and Keynesian direction, which sees a growing domestic or foreign demand that needs to be stimulated behind the growing product (Davidson, 1990). Both of these schools rely on different

principles when estimating future product development, and at the same time, within their models they use statistical and econometric techniques to the predictions.

The prediction of product development is a model-generated output that is not nearly as accurate as it may seem. The reason is the existence of many uncertainties associated with input assumptions and, as well known, many common small uncertainties result in significant aggregate inaccuracies (Saltelli & Funtowicz, 2014).

The inaccuracy of the outcome of the prediction of the future development of the product is a consequence of a lack of information needed to the elimination of uncertainty that we are face in any non-deterministic environment (Linden, 2003). This uncertainty is associated both with the inputs to the prediction model and its functioning. In the first case, we talk about "external" uncertainty stemming from the incomplete knowledge of the relevant values of the *known* factors that enter the prediction model, which, together with the *unknown* values, and therefore not taken into account in the model, affect the future growth rate of product. In the latter case, we deal with "inner" uncertainty arising from the approximate character of the formal description of the considered connections between the inputs and the output of the prediction model (Haskova, 2017).

Econometrics often identify uncertainty with randomness by considering, in the context of *the indifference principle* (see Priest, 2017), the existing vague alternatives as equally probable, and then building their prediction models solely on the basis of probability theory and mathematical statistics. The sets of observed data are represented by a system of unbiased point estimates of selected characteristics from which the predictive model derives the *statistically* expected value of the result. To obtain as much information as possible from the available data, sophisticated and complicated multiple regression algorithms help (see, for example, Zarnowitz & Lambros, 1987; Pace, 2013).

On the other hand, a number of system theory authorities (for example, Zadeh, 1983) call into question the effectiveness of decision-making and management procedures based on the approximation of uncertainty with randomness. These doubts are in place also in the case of product development prediction. In this paper we set the way of Dawes (1979) and Dana & Dawes (2004), from which can be concluded that an algorithm written on a piece of paper is often as good as a statistical formula with a multiple regression and certainly good enough to break an expert judgment.

Herein presented fuzzy algorithm can be included in the set of algorithms with this characteristic, as the *fuzzy algorithms* are generally much simpler than the probability calculations in econometric models, and therefore the solution to the problem is more feasible.

Within Zadeh fuzzy approach (Zadeh, 1983), offering *subjectively* expected values as an alternative to *statistically* expected values, this article deals with the fuzzy algorithm of the prediction of the time series continuation. This is precisely specified and justified in the following methodological part and applied in the application section for estimating the rate of growth of gross domestic product (GDP) of the Czech Republic in the year 2018 (compared to the official econometric forecast) and in 2020. An innovative fuzzy approach to the prediction of the GDP growth rate is the original contribution of this paper.

2. Methodology

The *fuzzy approach* foundations can be traced in different versions of fuzzy logic, which was created by adapting the binary numerical characteristics of the proposition operators to the interval $\langle 0,1 \rangle$ (in detail in Haskova, 2017). For us, the fuzzy logic is only a tool for the exact handling of fuzzy sets, the theory of which was published by L. A. Zadeh in 1965 - see Zadeh, 1965).

2.1 The elements of fuzzy set theory

Let the set U be a field of consideration or discussion (universe). Let $\mu_{\underline{A}}: U \to \langle 0,1 \rangle$ be a membership function and let $\underline{A} = \{(y, \mu_{\underline{A}}(y)): y \in U\}$ be a set of all pairs $(y, \mu_{\underline{A}}(y))$ in which the numbers $0 \leq \mu_{\underline{A}}(y) \leq 1$ assign to the given $y \in U$ a membership degree of the pair $(y, \mu_{\underline{A}}(y))$ to the set $\underline{A}$. Then $\underline{A}$ is a *fuzzy subset* on the U universe. The significant characteristic of fuzzy subset $\underline{A}$ is its support $U_{\underline{A}} = \{y: 0 < \mu_{\underline{A}}(y) \leq 1, y \in U\} \subset U$. In terms of fuzzy logic $\mu_{\underline{A}}(y) = |y \in U_{\underline{A}}|$. The element $y \in U$ with $\mu_{\underline{A}}(y) = 0.5$ is called the *crossover point* in $\underline{A}$. In the case of values greater than 0.5, the element y rather belongs to $U_{\underline{A}}$, in the case of the smaller ones it rather does not belong to it.

In this paper, the numerical fuzzy sets are formal representations of values (terms) of linguistic variables. For our purpose the model with one internal and two border fuzzy sets for the terms *low* ($\underline{L}$), *common* ($\underline{M}$), and *high* ($\underline{H}$) value is suitable. Interval U is divided with the points a, b, c, d into five sections with the following membership functions (1):

$$\mu_{\underline{L}}(x) = 1 \; for \; x < a, \mu_{\underline{L}}(x) = \frac{b-x}{(b-a)} \; for \; a \leq x < b, \mu_{\underline{L}}(x) = 0 \; otherwise;$$

$$\tag{1}$$

$$\mu_{\underline{M}}(x) = \frac{x-a}{b-a} \; for \; a \leq x < b, \mu_{\underline{M}}(x) = 1 \; for \; b \leq x < c, \mu_{\underline{M}}(x) = \frac{d-x}{d-c} \; for \; c \leq x < d, \mu_{\underline{M}}(x)$$
$$= 0 \; otherwise;$$

$$\mu_{\underline{H}}(x) = 0 \; for \; x < c, \mu_{\underline{H}}(x) = \frac{x-c}{d-c} \; for \; c \leq x < d, \mu_{\underline{H}}(x) = 1 \; otherwise.$$

The expert determines the position of the points a, b, c and d in the U universe. In the case of their regular distribution, we get the courses of the functions μ shown in Figure 1 captured by dashed lines. From it we see that the linguistic variable acquires the values at two levels: at the level of the basal values y in the universe U and at the level of terms (intuitive concepts) as fuzzy subsets of $\underline{L}$, $\underline{M}$, $\underline{H}$ in the universe U. Each of these terms is defined by its membership function $\mu_{\underline{L}}$, $\mu_{\underline{M}}$, $\mu_{\underline{H}}$ over the field of its support, which is a subset of U.

Another important tool of the fuzzy set theory is the *rule*. In our considered model with n input linguistic variables and one output linguistic variable it is an element $((\underline{A}_1,..., \underline{A}_n), \underline{C})$ of the relation $F \subset (\{\underline{L}_1, \underline{M}_1, \underline{H}_1\} \times ... \times \{\underline{L}_n, \underline{M}_n, \underline{H}_n\}) \times \{\underline{L}, \underline{M}, \underline{H}\}$, which a projection $F: (\{\underline{L}_1, \underline{M}_1, \underline{H}_1\} \times ... \times \{\underline{L}_n, \underline{M}_n, \underline{H}_n\}) \to \{\underline{L}, \underline{M}, \underline{H}\}$ in the form of $F(\underline{A}_1,..., \underline{A}_n) = \underline{C}$, where $\underline{C} \in \{\underline{L}, \underline{M}, \underline{H}\}$ and $\underline{A}_i \in \{\underline{L}_i, \underline{M}_i, \underline{H}_i\}$, i = 1,..., n. The n-tuple of terms $(\underline{A}_1,..., \underline{A}_n)$ is the left side of the rule, the term $F(\underline{A}_1,..., \underline{A}_n)$ is the right side of the rule. The relation F has a maximum of n^3 elements. If an expert decides on it, we call it a set of *inferential* rules.

2.2 Construction of multi-criteria fuzzy model valuation

One of the basic concepts of the fuzzy set theory is the so-called extension principle (Kahraman, 2008). It claims that if $U = U_1 \times \ldots \times U_n$ is a Cartesian product of the universe, $f : U \to Y$ projections from the universe U to the universe Y in the form $y = f(x_1, \ldots, x_n)$ and $\underline{A}_1, \ldots, \underline{A}_n$ are fuzzy subsets defined on universes $U_1, \ldots, U_n$, then a fuzzy subset can be defined on Y

$$\underline{B} = \{(y, \mu_{\underline{B}}(y)): y = f(x_1, \ldots, x_n), (x_1, \ldots, x_n) \in U\}, \text{ where}$$

$$\mu_{\underline{B}}(y) = \max\{\min\{\mu_{\underline{A}1}(x_1), \ldots, \mu_{\underline{A}n}(x_n)\}: (x_1, \ldots, x_n) \in f^{-1}(y) \neq \emptyset\};$$

if $f^{-1}(y) = \emptyset$, then $\mu_{\underline{B}}(y) = 0$, where f^{-1} is the inverse relation to f.

Our modification of the extension principle is based on the following steps:
- *Fuzzification* in which the input vector $x = (x_1, \ldots, x_n)$ converts each inference rule from the set P into the *logical* notation mode.
- *A set of partial results* is a set
  $B = \{\min\{\min\{\mu_1(x_1), \ldots, \mu_n(x_n)\}, \mu_{\underline{B}}\}: (\min\{\mu_1(x_1), \ldots, \mu_n(x_n)\}, \mu_{\underline{B}}) \in P^*\}.$
- *Aggregation* or summation of functions of set B into a compact unit and its μ_{agg} detection; this compact unit is a fuzzy subset on the universe V with
  $\mu_{agg} = \max\{\min\{\min\{\mu_1(x_1), \ldots, \mu_n(x_n)\}, \mu_{\underline{B}}\}: (\min\{\mu_1(x_1), \ldots, \mu_n(x_n)\}, \mu_{\underline{B}}) \in P^*\}.$
- *Defuzzification* is the final phase of the process, in the last step of which we obtain the output value y_x of the multi-criterion evaluation model of the alternative $(a_1, \ldots, a_c) \in A$ as the average of the values of the elements $y \in V$ weighted by the values $\mu_{agg}(y)$ of their significance. Therefore

$$y_x = \int y \cdot \mu_{agg}(y) dy / \int \mu_{agg}(y) dy. \tag{2}$$

2.3 Assumptions and data of the fuzzy model for the GDP prediction in the Czech Republic

The formulation of the fuzzy prediction model of the next time series element has its own specific features lying in the fact that we know a series of previous members of the resulting one. In particular, in the case of the GDP growth forecast it is possible to estimate in which phase of its development (decline, depression, growth, stable boom, etc.) the GDP occurs. We also know the previous part of the baseline values of several linguistic variables, on which GDP depends (albeit largely in a vague way). This is particularly reflected in the values of the extreme limits (borders) within which we search for the prediction result (see the following part for more details).

The following Table 1 lists the baseline values of input linguistic variables of LTI (Long-term interest rates), INV (percentage increase in investments), UNE (percentage of unemployment) and the output linguistic variable ΔGDP% (GDP growth rate) between 2010 and 2017 and the official econometric forecasts in the years 2018 and 2019 (the coloured columns).

An important specificity of the fuzzy model formulation is an opinion of a knowledgeable expert who takes his knowledge and experience into account by means of qualified interventions, both in the model structure and the formulation of inference rules, as well as in the process of solving the problem.

Table 1: Input macroeconomic data of the fuzzy model for prediction of GDP growth rate in the Czech Republic including official forecasts

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
LTI	3,9	3,7	2,8	2,1	1,6	0,6	0,4	0,8	1,6	2,1
INV	1	0,9	-2,9	-2,5	3,9	10,4	-2,5	6,6	4,3	3,1
UNE	7,3	6,7	7	7	6,1	5	4	2,9	2,4	2,4
ΔGDP%	2,1	1,8	-0,7	-0,5	2,7	5,4	2,5	4,3	3,5	3,2

Source: (European Economic Forecast, 2018; OECD data: Gross domestic product, 2018, Unemployment rate, 2018, Investment, 2018, Long-term interest rates, 2018 – own processing)

In the case of application of inference rules as a tool for partial transformation of inputs to outputs, the high value of the realized investment growth is a prerequisite for a faster GDP growth rate in the next period. On the contrary, the realized high interest rate value does not have this effect; it rather tends to hinder the GDP growth rate. As far as the unemployment rate is concerned - low unemployment is linked to a real product at the level of its potential, so that the accelerated GDP growth rate is not expected in the next period.

3. Results: Prediction of the GDP growth rate in the next period

From the course of the ΔGDP% it can be concluded that in the period 2014-2017 the Czech economy was in the phase of a relatively stable boom, which is supposed to maintain for another year. Therefore, the characteristics of this period will be default for the formulation of the **prediction fuzzy model for the year 2018**. The result will be searched within the interval of values 2.5 (year 2016) and 5.4 (year 2015). The recalculated minimum value (2.5) per percent of the maximum period (5.4) is (2.5 / 5.4) · 100 % = 46.3 %, which in the left graph of Figure 1 gives the interval $Y_{AGG} = \langle 46.3 - 100 \rangle$ % (the notation %ΔGDP is a notation abbreviation for the predicted ΔGDP% expressed as a percentage of the highest ΔGDP% in the previous four-year period). Analogously, for the recalculated vector input values $(x_{LTI}, x_{INV}, x_{UNE})$ for the year 2017, we get $x_{LTI} = (0.8 /1.6) \cdot 100 \% = 50 \%$, $x_{INV} = (6.6 /10.4) \cdot 100 \% = 63.5 \%$ and $x_{UNE} = (2.9 /6.1) \cdot 100 \% = 47.5 \%$; thus **(50, 63.5, 47.5)** $\in U$.

Given the internal uncertainty of the model (the uncertain dependence of ΔGDP% on LTI, INV and UNE), we choose the points a, b, c, d, mentioned in section 2.1 relation (1), in the interval 0 - 100 regularly distributed (a = 20, b = c = 60, d = 80). Therefore, the courses of membership functions for all recalculated inputs are identical (see Figure 1):

- $\mu_L(x) = 1$ for $x < 20$, $\mu_L(x) = (40 – x) / 20$ for $20 \leq x < 40$, $\mu_L(x) = 0$ otherwise;
- $\mu_M(x) = (x – 20) / 20$ for $20 \leq x < 40$, $\mu_M(x) = 1$ for $40 \leq x < 60$, $\mu_M(x) = (80 – x) / 20$ for $60 \leq x < 80$, $\mu_M(x) = 0$ otherwise;
- $\mu_H(x) = 0$ for $x < 60$, $\mu_H(x) = (x – 60) / 20$ for $60 \leq x < 80$, $\mu_H(x) = 1$ otherwise.

From these equations and inequalities, the following *fuzzification* table, valid for i = LTI, INV, UNE, whose elements are the values $\mu_{Ai}(x_i)$ where $A_i \in \{L_i, M_i, H_i\}$, is derived:

Table 2: Fuzzification table valid for i = LTI, INV, UNE

Interval	$x_i < 20$	$20 \leq x_i < 40$	$40 \leq x_i < 60$	$60 \leq x_i < 80$	$x_i \geq 80$
L_i	1	$(40 – x_i) / 20$	0	0	0
M_i	0	$(x_i – 20) / 20$	1	$(80 – x_i) / 20$	0
H_i	0	0	0	$(x_i – 60) / 20$	1

Source: (own processing)

In the fuzzification table, only non-zero elements are taken into account and the set $X = \{(\underline{M}_{LTI}, 1), (\underline{M}_{INV}, 0.825), (\underline{H}_{INV}, 0.175), (\underline{M}_{UNE}, 1)\}$ is created.

Comment on forming the set X using a fuzzification table:

- The value $x_{LTI} = 50$ (for i = LTI) falls into the column of the middle interval; there is a single non-zero element (1) in the $\underline{M}_{LTI}$ line, and therefore $(\underline{M}_{LTI}, 1)$.
- The value $x_{INV} = 63.5$ (for i = INV) falls within the interval of the penultimate column; there are two nonzero elements – the first, $((80 - x_i) / 20)$ in the $\underline{M}_{INV}$ line, gives after assigning $(80 - 63.5) / 20 = 0.825$ and therefore $(\underline{M}_{INV}, 0.825)$, the second, $((x_i - 60) / 20)$ in the $\underline{H}_{INV}$ line, gives after assigning $(63.5 - 60) / 20 = 0.175$ and therefore $(\underline{H}_{INV}, 0.175)$.
- The value $x_{UNE} = 47.5$ (for i = UNE) falls into the middle column interval; there is a single non-zero element (1) in the $\underline{M}_{UNE}$ line, and therefore $(\underline{M}_{UNE}, 1)$.

From the set X two-element set $LF = \{(\underline{M}_{LTI}, \underline{M}_{INV}, \underline{M}_{UNE},), (\underline{M}_{LTI}, \underline{H}_{INV}, \underline{M}_{UNE},)\}$ is created. After application of the inference rules $F(\underline{M}_{LTI}, \underline{M}_{INV}, \underline{M}_{UNE},) = \underline{M}$ and $F(\underline{M}_{LTI}, \underline{H}_{INV}, \underline{M}_{UNE},) = \underline{H}$ to the trio from LF we can convert the general expression $\min\{\min\{\mu_{\underline{A1}}(x_1),\ldots,\mu_{\underline{An}}(x_n)\}, \mu_{F(\underline{A1},\ldots,\underline{An})}\}$ into the particular form. In the first case this form is $\min\{\min\{1, 0.825, 1\}, \mu_{\underline{M}}\} = \min\{0.825, \mu_{\underline{M}}\} = \mu_{\underline{M}}^*: Y_M \to (0, 0.825\rangle$, in the second case $\min\{\min\{1, 0.175, 1\}, \mu_{\underline{H}}\} = \min\{0.175, \mu_{\underline{H}}\} = \mu_{\underline{H}}^*: Y_H \to (0, 0.175\rangle$. For the membership function $\mu_{\underline{AGG}}: \langle 46.3 - 100\rangle \to (0, 1\rangle$ to the fuzzy set $\underline{AGG}$ we get: $\mu_{\underline{AGG}} = \max\{\mu_{\underline{M}}^*, \mu_{\underline{H}}^*\}$, where $\mu_{\underline{M}}^*: \langle 46.3 - 80\rangle \to (0, 0.825\rangle$ and $\mu_{\underline{H}}^*: \langle 60 - 100\rangle \to (0, 1\rangle$. That is $\mu_{\underline{AGG}}(y) = 0.825$ for $46.3 \leq y < 62.5$, $\mu_{\underline{AGG}}(y) = (80 - y) / 20$ for $62.5 \leq y < 76.5$ and $\mu_{\underline{AGG}}(y) = 0.175$ for $76.5 \leq y \leq 100$ (see the strongly drawn outline in Figure 1 on the left).

For calculating certain integers of the formula $y_0 = \int y \cdot \mu_{\underline{AGG}}(y)dy / \int \mu_{\underline{AGG}}(y)dy$ (see relation (2)) it applies: $\int y \cdot \mu_{\underline{AGG}}(y)dy = 0.825 \cdot \int y dy + \int y \cdot (80 - y)/20\ dy + 0.175 \cdot \int y dy = 1\ 633$ (in the first integral it is integrated within $46.3 \leq y < 62.5$, in the second $62.5 \leq y < 76.5$, in the third $76.5 \leq y \leq 100$). $\int \mu_{\underline{AGG}}(y)dy = 0.825 \cdot \int dy + \int (80 - y)/20\ dy + 0.175 \cdot \int dy = 25$ (within the same integration limits); $y_0 = 1\ 633 / 25 = 63.78$ %. After recalculating to the nominal values we get $y_0 = 63.78 \cdot 5.4 / 100 = 3.44$.

The prediction of the fuzzy model for the year 2020 is based on the data from the 4-year period 2016 - 2019, taking into account the econometric official predictions of the respective values in 2018 and 2019 (the coloured columns of Table 1). The expected maximum ΔGDP% dropped to the value 4.3 (year 2017). Therefore, the recalculated value of the result is expected in the interval $Y_{AGG} = \langle 58 - 100\rangle$ % and it applies: **(100, 47, 60)** $\in U$. This corresponds to $X = \{(\underline{H}_{LTI}, 1), (\underline{M}_{INV}, 1), (\underline{M}_{UNE}, 1)\}$ and $LF = \{(\underline{H}_{LTI}, \underline{M}_{INV}, \underline{M}_{UNE})\}$. $F(\underline{H}_{LTI}, \underline{M}_{INV}, \underline{M}_{UNE}) = \underline{M}$, $\min\{\min\{\mu_{\underline{A1}}(x_1),\ldots,\mu_{\underline{An}}(x_n)\}, \mu_{F(\underline{A1},\ldots,\underline{An})}\} = \min\{\min\{1, 1, 1\}, \mu_{\underline{M}}\} = \min\{1, \mu_{\underline{M}}\} = \mu_{\underline{M}}$; $\mu_{\underline{AGG}} = \max\{\mu_{\underline{M}}\} = \mu_{\underline{M}}: \langle 58 - 80\rangle \to (0, 1\rangle$, i.e. $\mu_{\underline{AGG}}(y) = 1$ for $58 \leq y < 60$, $\mu_{\underline{AGG}}(y) = (80 - y) / 20$ for $60 \leq y < 80$ (see the strongly drawn outline in Figure 1 on the right).

For the calculation of the certain integers of the formula $y_0 = \int y \cdot \mu_{\underline{AGG}}(y)dy / \int \mu_{\underline{AGG}}(y)dy$ (see relation (2)) it applies: $\int y \cdot \mu_{\underline{AGG}}(y)dy = \int y dy + \int y \cdot (80 - y)/20\ dy = 785$ (in the first integral it is integrated within the limits of $58 \leq y < 60$, in the second $60 \leq y < 80$). $\int \mu_{\underline{AGG}}(y)dy = \int dy + \int (80 - y)/20\ dy = 12$; $y_0 = 785 / 12 = 65.4$ %. After recalculating to the nominal values we get $y_0 = 65.4 \cdot 4.3 / 100 = 2.81$.

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Figure 1: The courses of the predicted functions μ_{AGG} for the year 2018 (left) and 2020 (right)
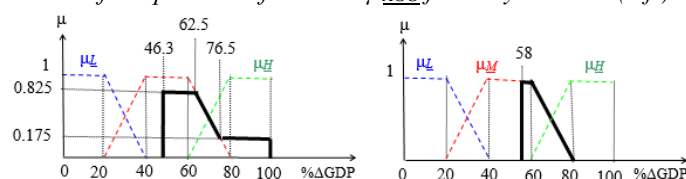
Source: (own processing)

4. Summary and conclusion

The aim of the paper is to present a general fuzzy algorithm for solving decision-making problems under conditions of the internal uncertainty of the model of a solved task, formulated within the Zadeh´s fuzzy approach that offers *subjectively* expected values as an alternative to the *statistically* expected values. The theoretical basis of the fuzzy algorithm is the transformation of the so-called extension principle into the form of the linguistic variables and their terms in which the problem is solved. In the application part this algorithm is used to the prediction of the growth rate of GDP of the Czech Republic in the year 2018 (compared to the stated econometric forecast) and in the year 2020. The default data of the prognosis are the components of the previous four-year evolution of the three macroeconomic indicators (the long-term interest rates, investments and unemployment) published in OECD statistics. These are used both in the fuzzy model formulation phase within which an expert gets (through qualified interventions in the model structure and formulation of the inference rules) an opportunity to take into account the knowledge and experience and in the process of solving a task that is purely mechanical, independent of human factor. It consists of five basic steps, which are fuzzification, application of inference rules, processing of intermediate results, aggregation and defuzzification. The contribution to the fuzzification process is the formulation of a fuzzification table that makes the solution considerably transparent and easier to understand. In terms of inferential rules in the function of partial input transformation tools, only three of them were used of the total number 27: ((*M*, *M*, *M*), *M*), ((*M*, *H*, *M*), *H*) and ((*H*, *M*, *M*), *M*). The difference between the right sides of the last two has its substantive reason – the high value of today's investment growth mainly accelerates the next rate of GDP growth, the current high value of long-term interest rates does not have this effect (it rather tends to decelerate the rate of GDP growth). The results of both tasks (the courses of μ_{AGG} functions) in terms of the linguistic variable ΔGDP% are shown in Fig. 1, in which the % ΔGDP is a notation abbreviation for the predicted ΔGDP%, expressed as a percentage of the highest ΔGDP% in the previous four-year period. By recalculating the distances of the centre of gravity of the strongly delimited areas from the vertical coordinate axes to the nominal values, the predictions of ΔGDP% were obtained for the year 2018 in the value of 3.44 % (the official econometric prediction is 3.5 %) and 2.81 % for the year 2020. Here applied fuzzy approach to the prediction of the GDP growth rate is the original contribution of this paper.

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GLOBALIZATION AND IMPACT OF INDUSTRY 4.0 AND SOCIETY 4.0 ON THE LABOUR MARKET

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Abstract: The Czech Republic has the lowest unemployment rate in the European Union. The actual unemployment rate in the Czech Republic reached 2.3% in July 2018 and is lower than the natural rate of unemployment. Minimum and average wage has a growing tendency. This situation causes an excess of demand for labour over job offer. Additionally, the pressure to increase labour productivity, greater efficiency and lower costs forces companies to look for new ways to make savings and improve their production program. One of the ways, how to solve this problem is initiative Industry 4.0. Industry 4.0 will lead to labour substitution using capital. The impact of Industry 4.0 on the labour market will be strong and is currently difficult to predict the result. Changes will have a global impact and they can manifest themselves as a decline in globalization. The aim of the article is to analyse the impacts of Industry 4.0 in the Czech Republic and throughout the European Union. In the second part of the article, there is an analysis of unemployment in context of age, education and gender, which is taking into account the impacts of Industry 4.0 and Work 4.0 on the labour market. Based on analysed data and literary research of selected studies, possible scenarios of the creation and termination of jobs in the Czech Republic and worldwide are presented. Literary research deals with Industry 4.0 and Work 4.0 not only in the Czech Republic but also abroad. Primary and secondary data were used.

Keywords: Industry 4.0, minimum wages, unemployment, knowledge, globalization

JEL Classification: J21, E24, O33, J31

1. Introduction

Přestože se od roku 2010 debatuje o zpomalení procesu globalizace, kterou měří různé organizace po celém světě (např. Curyšská univerzita, McKinsey, DHL atd.), od roku 2011 nastupuje nový fenomén Průmysl 4.0. Německo se první veřejně odkazovalo na digitalizaci průmyslu jako "Industrie 4.0" v roce 2011 (Kagermann, H., et al. 2013). Poté byl termín rozšířen na anglosaský pojem „Industry 4.0", zatímco jiné země zavádějí různé výrazy pro popis tohoto fenoménu. Spojené státy americké se zaměřují na „Smart Manufacturing" stejně jako Japonsko a Korea. General Electrics popularizoval koncept „Industrial Internet". Konečně, další obyčejně příbuzná slova nalezená v literatuře jsou „Intelligent

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Manufacturing", „Advanced Manufacturing", „Integrated Industry", „Smart Industry" a „Smart Factory" (Thoben & Wuest, 2017; Hermann et al., 2016; Ibarra et al., 2018).

Termín Průmysl 4.0 označuje čtvrtou průmyslovou revoluci, která je definována jako nová úroveň organizace a kontroly celého hodnotového řetězce životního cyklu produktů; je zaměřena na stále více individualizované požadavky zákazníků. Průmysl 4.0 je stále vizionářský, ale realistický koncept, který zahrnuje internet věcí, průmyslový internet věcí, inteligentní výrobu, výrobu na bázi cloudu a další. Průmysl 4.0 se týká přísné integrace člověka do výrobního procesu tak, aby se neustále zlepšovalo a zaměřovalo na činnosti s přidanou hodnotou a zabraňovalo se vzniku odpadů. (Vaidya et al., 2018). Průmysl 4.0 je považován za novou průmyslovou fázi, ve které integrace a propojení produktů do vertikálních a horizontálních výrobních procesů mohou pomoci společnostem dosáhnout vyšší výkonnosti v průmyslu. (Dalenogare et al., 2018).

Index připravenosti zemí sestavený firmou Roland Berger řadí ČR mezi „tradicionalisty". To znamená země, které těží z kvalitní průmyslové základny, ale zatím nezavedly iniciativy na posunutí průmyslu do nové éry. Připravenost země na Průmysl 4.0 je dle tohoto indexu charakterizována: průmyslovou excelencí a hodnotovým systémem. Cílem Průmyslu 4.0 je dlouhodobá konkurenceschopnost České republiky. (MPO, 2016) Vahlne a Johanson (2017) vytvořili model vývoje nadnárodního podnikání (MBE), od raných kroků v zahraničí až po globální firmu. Brandl a kol. (2018) analyzují mezinárodní dohody a instituce, jak ovlivňují inovace v rozvojových zemích.

2. Cíl a metodika práce

Při zpracování článku byly použity primární a sekundární zdroje. Data o podílu nezaměstnaných osob a nezaměstnanosti byla čerpána z Českého statistického úřadu a Eurostatu. Informace a údaje o Průmyslu 4.0 a Práci 4.0 byla čerpána především z dvou klíčových dokumentů Iniciativa Práce 4.0 z Ministerstva práce a sociálních věcí, Úřadu vlády a Iniciativy Průmysl 4.0 z Ministerstva průmyslu a obchodu. Mezi sekundární zdroje patří především odborné zahraniční časopisy, odborná literatura, webové stránky, diskuze a účast na odborných seminářích a konferencích (Hedvicakova & Svobodova, 2017). Následně kategorizovat, analyzovat a aktualizovat dostupné relevantní informace ze shromážděných materiálů, aby mohly být poskytnuty základní znalosti o vybraném tématu.

Cílem článku je stručně představit koncept Průmysl 4.0 a následně analyzovat situaci na trhu práce v kontextu Průmyslu 4.0 a Práce 4.0 v České republice a jejich dopady. Míra nezaměstnanosti bude analyzována podle věku i vzdělání. Na základě dostupných informací budou vyvozeny možné dopady iniciativy Průmysl 4.0 na trh práce s důrazem na požadavky na nové znalosti a dovednosti, které vlivem této iniciativy budou potřeba. Dále budou představeny odhady studií věnující se vzniku a zániku pracovních míst vlivem Průmyslu 4.0.

3. Výsledky

3.1 Dopady Průmyslu 4.0

Průmysl 4.0 bude mít celosvětový dopad. Mezi hlavní dopady v České republice i celé Evropské unii lze uvést:

- Změnu výrobních procesů (změní se charakter výroby, Průmysl 4.0 povede ke zvýšení efektivnosti a produktivity práce, snížení nákladů, zakázkové řešení, just in time, zmenšení globálních řetězců, robotizace);
- Dopady na trhu práce (vlivem robotizace a digitalizace dojde ke zvýšení nezaměstnanosti především u nízko kvalifikovaných pracovních míst, požadavky na nové znalosti a dovednosti, zvýšení požadavků a pracovních míst u technických a IT zaměstnanců, větší možnost spolupráce v mezinárodních týmech, zkracování pracovní doby a její vyšší flexibilita, zvyšování bezpečnosti práce a snížení její rizikovosti atd.);
- Výroba a logistika (jedná se především o substituci práce kapitálem, růst investic na úkor mzdových nákladů, navrácení výroby z rozvojových zemí zpět do vyspělých států, lokalizace výroby – přesun výroby blíže zákazníkům, zvýšená role družicové telekomunikace a navigace, prediktivní údržba výrobních zařízení, individualizace hromadné výroby);
- Snížení globalizace (vlivem změny výroby může dojít k ekonomickému posílení jednotlivých států Evropské unie, oslabení nadnárodních struktur, posílení místních trhů a tradic);
- Dopady na mezinárodních obchod (v budoucnu by se mohla vlivem Průmyslu 4.0 snížit potřeba celosvětových organizací pro mezinárodní obchod, mezinárodní obchod nebude mít z ekonomického hlediska takový význam jako v současné době);
- Růst HDP (celosvětově se očekává zvýšení zisků společností a růst HDP, změna podílu mezd na HDP);
- Ekonomické a sociální důsledky (rozevírání nůžek mezi obyvateli, změna životní úrovně).

Hamzeh et al. (2018) a Davies (2015) uvádějí, že Průmysl 4.0 může zvýšit produktivitu a efektivnost. Za pět let bude více než 80 % evropských společností digitalizovat svůj hodnotový řetězec a zvýší tak efektivnost až o 18 %. Do roku 2020 budou evropské průmyslové společnosti investovat více než 100 miliard Eur ročně v rámci Průmyslu 4.0.

3.2 Vývoj podílu nezaměstnaných osob v ČR

Česká republika má dlouhodobě jednu z nejnižších měr nezaměstnanosti v celé Evropské unii. Od roku 2017 se dostala pod svoji přirozenou míru nezaměstnanosti. Podíl nezaměstnaných osob byl v roce 2017 3,77 % viz. Obrázek 1. Z tohoto důvodu dochází k převisu poptávky práce nad nabídkou práce. Tato situace způsobuje problémy především firmám, které nemohou najít dostatečně kvalifikovanou pracovní sílu nebo jsou nuceny zvýšit mzdovou sazbu a pracovní benefity. Tato situace také způsobuje růst mzdových nákladů i průměrné mzdy v České republice. Růst průměrné mzdy však není vyvážen růstem produktivity práce. (Hedvicakova, 2018; Hedvicakova, 2018a; Hedvicakova & Kral, 2018)

Tento trend snižování míry nezaměstnanosti pod její přirozenou míru by měla zastavit právě inciativa Průmysl 4.0. Vlivem Průmyslu 4.0 dojde k významnému zvýšení míry nezaměstnanosti. Různé studie uvádějí odlišné prognózy viz. Table 1.

Druhým dopadem bude zvýšení disparit mezi mzdami u jednotlivých profesí. U kvalifikované pracovní síly, především technických a IT profesí, bude docházet vlivem Průmyslu 4.0 k růstu mzdových nákladů. Budou se však zvyšovat i požadavky na znalosti a dovednosti. Naopak u profesí s nízkou kvalifikací dojde ke snížení mzdových sazeb a současně bude docházet k substituci práce kapitálem. Podíl robotů se bude neustále zvyšovat.

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3.2.1 Podíl nezaměstnaných osob dle genderových statistik v ČR

Pokud se zaměříme na genderové srovnání je vyšší podíl nezaměstnaných žen než mužů. Tato situace je podobná před hospodářskou krizí i po krizi. Od roku 2013 dochází k poklesu podílu nezaměstnaných osob jak u žen tak i u můžu.

Figure 1: Podíl nezaměstnaných osob v České republice v procentech (stav k 31.12)
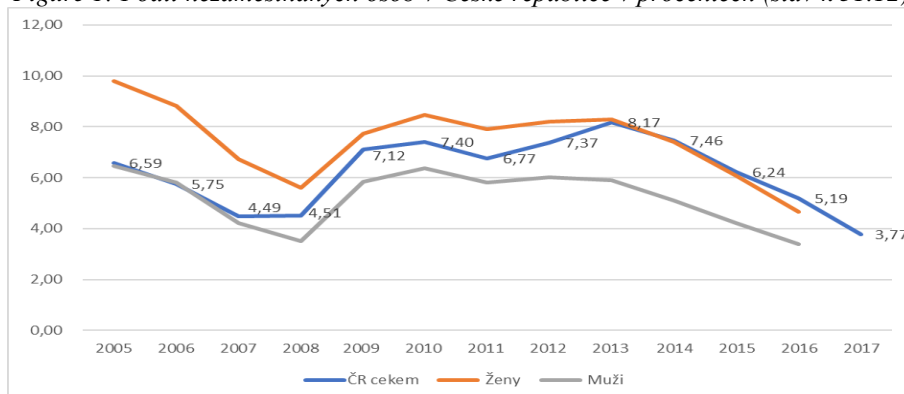
Source: (ČSÚ, 2017; vlastní zpracování)

3.2.2 Míra nezaměstnanosti dle úrovně vzdělání v ČR

Pokud se zaměříme na srovnání míry nezaměstnanosti podle vzdělání, jednoznačně nejvyšší míra nezaměstnanosti jak u žen, tak u mužů je u základního vzdělání či osob bez vzdělání. Míra nezaměstnanosti u mužů se základním vzdělním a bez vzdělání byla vyšší než u žen před hospodářskou krizí i po krizi. Od roku 2013 má klesající tendenci současně s nastupujícím hospodářským růstem.

Nejnižší nezaměstnanost je u vysokoškolsky vzdělaných obyvatel. Míra nezaměstnanosti se u můžu pohybovala v analyzovaných letech od 1,5 % do 2,6 % v roce 2010, kdy vrcholila hospodářská krize. U žen s vysokoškolským vzděláním je podíl nezaměstnaných osob vyšší. Míra nezaměstnanosti se ve sledovaných letech pohybovala od 1,7 % před krizí v roce 2007 až po 3,4 % v letech 2012 – 2014.

Dopady Průmyslu 4.0 na míru nezaměstnanosti u jednotlivých skupin dle vzdělání budou především u nízko kvalifikované práce, tzn. pro ženy i muže se základním vzdělání a bez vzdělání. Zde se počítá s největší substitucí práce kapitálem a nástupem robotizace. Dalším negativním důsledkem pro tuto skupinu pracovníků bude nízká mzda, která se bude pohybovat mírně nad minimální mzdou.

Naopak se očekává převis poptávky práce po kvalifikovaných pracovnících především s vysokoškolským stupněm vzdělání. U této skupiny se očekává naopak růst mzdových sazeb. Nejvyšší poptávka práce bude pravděpodobně po technických a IT specialistech.

Vokoun a Straková (2016) zanalyzovali, že využití nových technologií ve výrobním procesu může být levnější a jejich výsledky ukazují, že jsou již levnější než náklady na pracovní sílu pro pracovníky s nízkou kvalifikací s minimální mzdou. Riziko nezaměstnanosti bude ještě vyšší díky umělé inteligenci; nicméně je třeba nalézt více vazeb mezi nekvalifikovanou prací a novými technologiemi. Chmelař a kol. (2015) naopak uvádí, že poptávka po spíše nižších kvalifikacích poroste, poptávka po kvalifikačně náročných profesích zůstane spíše stabilizovaná.

Všichni pracovníci se vlivem Průmyslu 4.0 budou muset učit novým znalostem a dovednostem. Budou vznikat nové pracovní pozice, bude kladen důraz na jiné znalosti a dovednosti, některé v současné době ještě nejsou známé. Bude nutné propojit iniciativu Průmysl 4.0 s Prací 4.0 a komplexně pracovat na systematické přípravě na příchod robotizace a digitalizace. Nutná je i kompletní reforma vzdělávacích programů, která spadá do iniciativy Vzdělání 4.0. Protože čtvrtá průmyslová revoluce zasáhne všechny oblasti, bývá označována souhrnným názvem Společnost 4.0. Společnost 4.0. Společnost 4.0 připravuje na nástup digitalizace a s tím souvisejících požadavků na rozšiřování digitálních dovedností napříč generacemi.

Figure 2: Míra nezaměstnanosti podle vzdělání v procentech v České republice
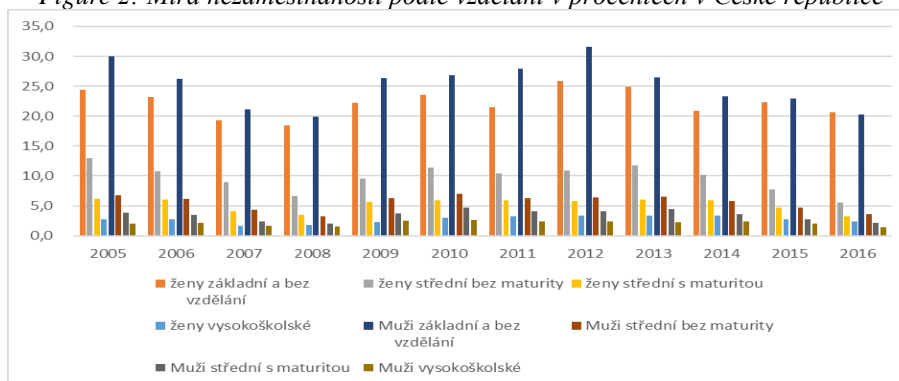
Source: (ČSÚ, 2017; vlastní zpracování)

3.2.3 Míra nezaměstnanosti dle věku v ČR

Nejvyšší míra nezaměstnanosti je u věkové skupiny 15 – 19 let jak u žen tak i u mužů. V době hospodářské krize, od roku 2009 přesáhla míra nezaměstnanosti u této věkové skupiny 30 %. A následující rok byla míra nezaměstnanosti u žen 40,2 % a dále se zvyšovala až do roku 2013, kdy míra nezaměstnanosti u žen ve věku 15 – 19 byla 47,6 %. Následně začala pozvolna klesat a v roce 2016 byla míra nezaměstnanosti u této skupiny 26,8 % viz. Obrázek 3.

U mužů ve věkové skupině 15-19 let byla míra nezaměstnanosti nejvyšší v letech 2012, kdy dosáhla 48,3 %. Následně začala klesat na 22,7 % v roce 2016.

Figure 3: Míra nezaměstnanosti podle věku v procentech v České republice
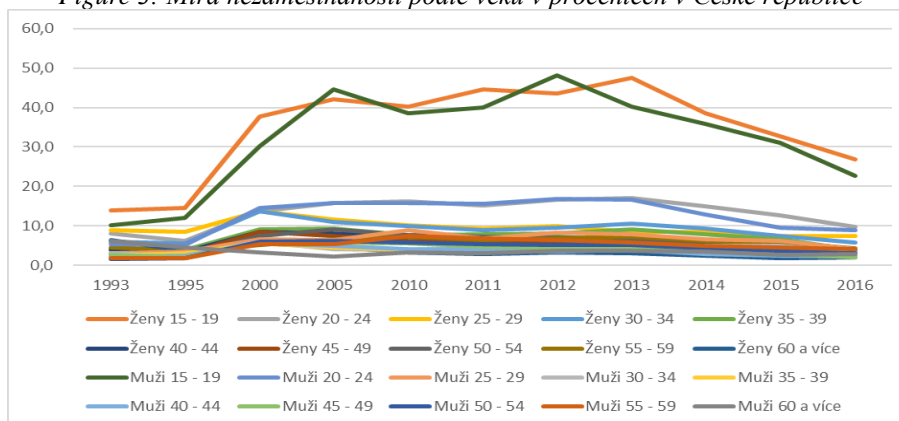
Source: (ČSÚ, 2017; vlastní zpracování)

Vlivem Průmyslu 4.0 je nejvíce ohrožena věkové skupiny nad 55 let, kdy na pracovníky budou kladeny vysoké nároky na nové dovednosti a znalosti. Bude záležet na konkrétních lidech, jak se s tímto trendem vyrovnají a zda budou ochotni se neustále vzdělávat a učit novým dovednostem.

3.3 Predikce vzniku a zániku pracovních míst

Predikce vzniku a zániku pracovních míst se od sebe významně liší u jednotlivých autorů i v jednotlivých zemích. Dopady Průmyslu 4.0 však budou mít jednoznačně negativní dopady na růst míry nezaměstnanosti.

Table 1: Predikce vzniku a zániku pracovních míst

Autor	Predikce
Frey, Osborne (2013)	47 % pracovních míst ohroženo v USA
Úřad vlády ČR (2015)	poměr ohrožených a nově vzniklých pracovních míst 5:2 (ČR)
Davoské fórum (2016)	poměr ohrožených a nově vzniklých pracovních míst 7:2 (vysp.země)
Arntz,Gregory, Zierahn (2016)	poměr ohrožených a nově vzniklých pracovních míst 7:6 (SRN)
OECD (Employment Outlook 2016)	V následujících 20 letech bude 10 % pracovních míst vysoce ohroženo automatizací + u 35 % pracovních míst dojde k podstatným změnám ve vykonávaných činnostech.
Špidla (2017)	**53 pracovních míst**

Source: (MPSV, 2016; vlastní zpracování)

Pokud převedeme tyto podíly na počet pracovních míst existujících v ekonomice ČR v roce 2015 vyjádřený počtem zaměstnaných v tomto roce, potom by mělo být ohroženo cca 408 tisíc pracovních míst a u 1,4 milionu pracovních míst by mělo dojít k podstatné změně. (MPSV, 2016)

Mortensen a Pissarides (1994) ukazují, že agregátní šok vyvolává negativní korelaci mezi tvorbou pracovních míst a rušením pracovních míst, zatímco šok disperze vyvolává pozitivní korelaci. Proces rušení pracovních míst má vyšší volatilitu než proces vytváření pracovních míst. Gennaioli a kol. (2013) poukazují na zásadní význam lidského kapitálu při zohledňování vývoje regionálních rozdílů.

4. Conclusion

Cílem článku bylo stručné představení Průmyslu 4.0 a jeho dopady jak v České republice, tak celosvětově. Tyto změny budou mít globální dopad a může docházet i k poklesu míry globalizace. Druhá část článku byla zaměřena na analýzu nezaměstnanosti v kontextu věku, vzdělání a pohlaví, která analyzuje možné dopady Průmyslu 4.0 a Práce 4.0 na trh práce. Na základě analyzovaných dat a literárního výzkumu vybraných studií jsou prezentovány možné scénáře vzniku a zániku pracovních míst v České republice i na celém světě. Dle Úřadu vlády je poměr ohrožených a nově vzniklých pracovních míst v České republice 5:2 (MPSV, 2016). Nicméně jednotlivé studie se od sebe významně liší a je potřeba se na čtvrtou průmyslovou revoluci kvalitně připravit. Z tohoto důvodu je nutné přistupovat k inciativě Průmysl 4.0 komplexně a systematicky. Již nyní je nutné upravovat učební plány pro koncept vzdělávání v digitální době. Z tohoto důvodu na konci roku 2016 začalo Ministerstvo školství, mládeže a tělovýchovy České republiky vytvářet se zástupci různých odvětví průmyslu a odbory iniciativu Vzdělání 4.0. Protože čtvrtá průmyslová revoluce zasahuje všechny oblasti, je označována souhrnným názvem Společnost 4.0. Na závěr je nutné uvést, že Průmysl 4.0 je

především o odpovědné podpoře změny způsobu myšlení celé společnosti než o konkrétních technologiích. (MPO, 2016)

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GLOBALIZATION AND HEALTH: PRIORITIES FOR RESEARCH ACTIVITIES AND NATIONAL POLICIES WITH EMPHASIS ON STATISTICAL ANALYSIS

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Abstract. In the past, globalization was an economic topic. Today, the globalization is not only the economic phenomenon, but it is possible to see the globalization in wider context in many research areas. Of course, the globalization is a key challenge for health policies. Connection between globalization and health is very complex problem, but one fact is clear: the good health and quality of healthcare provision are as essential preconditions for successful globalization. The topic of human health is multi-factorial and many health problems have a global context. This paper is focused on health effects of different aspects of globalization. The paper presents a knowledge base for the linkages between economic globalization and health, with the intention that it will serve as a basis for synthesizing existing relevant literature, identifying gaps in knowledge, and ultimately developing national and international policies more favourable to health. The paper also shows the selected analyses, which are used for researches in the area of health policies in context of globalization. The paper may help to improve the process of globalization on many levels and may set up the processes of a sustainable and healthy development for all. The data from international databases and statistical methods are used in the paper.

Keywords: globalization, health, knowledge, analyse, policies

JEL Classification: E60, F60, I10, C10

1. Introduction

The economists solve the problem "globalization" in many research papers and the very important fact is that they focus on the movement of goods, people, information, and ideas, and they look at the effects on economic growth, poverty and inequality. Health is not a primary focus of their attention (Deaton, 2004). There are almost absent health effects of globalization in literature sources. On the other hand, we can find a few of some research activities which are discussed the health consequences of globalization – see for example Macfarlane et al. (2008), Yan Liu et al. (2015), Martens et al. (2010), Hejdukova (2015), Labonte & Torgeson (2003), Kawachi & Wamala (2006).

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How mentioned Martens et al. (2010), the globalization is more than economic phenomenon which is manifested itself on the global scale. Globalization is something more complex, takes place across continents, time, cultural values, economics, political and social attitudes. An important impact of globalization is thus evident in human capital (Hejdukova, 2015). Nowadays, it is necessary to open the space for globalization-health link, because the globalization processes influence many important health determinants.

This paper begins with a brief overview of the selected researches in the topic of globalization and health. Then, the data and methods and results of the empirical study are presented and discussed. The empirical part of our study aimed to investigate health effect of globalization in EU countries using static panel data model. At the end of the paper the authors mentioned some suggestions for future research.

2. Globalization and Health – selected researches

There exist some different opinions on health effects of globalization in literature. Primary, the non-economists, the experts in health science take a more negative view of globalization. How mentioned Deaton (2004) the non-economists take very often a broad definition of globalization in comparison with economists and into the term "globalization" also include policies, privatization, structural adjustment programs etc.

The causality between globalization and human health is complicated. The reason of this is the fact that the causality is multi-factorial, many population health problems are invariably embedded in a global context (Huynen, 2008). There is also very big discussion about global-health link in the academic level. The problem is also the limited empirical evidence on the multiple links between globalization and health (Martens et al., 2010). Some examples of health impacts of globalization can be positive, some negative. Selected health impacts of globalization are showed in Table 1.

Table 1: Positive and negative health impacts of globalization: some examples

Positive health impacts of globalization	Negative health impacts of globalization
Diffusion of knowledge and technologies, improving health services	Spread of infectious diseases due to increased movement of goods and people
Diffusion of knowledge and technologies, improving food and water availability (e.g. irrigation technology)	Spread of unhealthy lifestyles due to, for example, cultural globalization, global trade and marketing
Improvements in health care or sanitation due to economic development	Brain drain in the health sector
Global governance efforts, such as WHO's Framework Convention on Tobacco Control (WHO FCTC) and WHO's Global Outbreak Alert and Response Network	Health risks due to global environmental change
Increased access to affordable food supplies due to free trade	Decreased government spending on public services due to, for example, Structural Adjustment Programmes (SAPs)
	Inequitable access to food supplies due to asymmetries in the global market

Source: (Martens et al., 2010; Huynen, 2008; Huyen, 2005)

Other authors – see for example Deaton (2004) or Viscusisi & Aldy (2004) – are interested in relationship of globalization and life expectancy. There are many different results in the studies which depends on the fact if is it poor or rich countries, on gender etc. According Liu et al. (2012) Life expectancy is a major indicator of individual survival. It also serves as a

guide to highlight both the progress and the gaps in total social and societal health. Using the indicator Life expectancy in health economy we can see by Sedgley & Elmslie (2018), Jasilionis (2018) or Bulley & Pepper (2017). Also, we solve the problem of health effects of globalization with using the Life expectancy and we focused on developed countries in following parts of this paper.

3. Data and Methods

This study covered 21-EU countries for the period of 2008–2014. These 21 countries include: Austria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, United Kingdom.

Life-expectancy (h_le) was used as proxy for health effect, as was mentioned above this indicator can represent societal health.There are also many indicators which can represent globalisation, this study focused mainly on economic aspects of globalisation and that is why three economic globalisation indicator published by Eurostat were chosen: Export to import ratio (g_trade), Value Added in Foreign Controlled Enterprises (g_fadd) and Employment in Foreign Controlled Enterprises (g_fempl) were used as proxy for globalization. Data was collected from two databases: Eurostat and OECD and covered time period from 2008 to 2014. In this study, it was preferred panel data models, because these models provide using a larger number of observations that are not available in conventional time series. An overview of the variable's description and the available time series are presented in Table 2.

Table 2: An overview of the variable's description

Variable	Statistical indicator	Note	Available Time period	Source
h_le	Life expectancy	Total population at birth (Years)	2000–2016	OECD
g_trade	Export/Import ratio	ratio	2005–2014	
g_fadd	Value Added in Foreign Controlled Enterprises	Percentage of total	2008–2015	Eurostat
g_fempl	Employment in Foreign Controlled Enterprises	Percentage of total	2008–2015	

Source: (Eurostat, OECD)

A logarithmic transformation of data was applied before the estimation of the econometric model. There was one missing value in two time series (Ireland, Luxembourg), these values were estimated using an arithmetic mean. An econometric model was also defined to test the hypothesis whether globalization affects health in EU countries. The econometric model can be expressed by the following simple linear equation

$$h\_le_{it} = \alpha + \beta_1 g\_trade_{it} + \beta_2 g\_fadd_{it} + \beta_3 g\_fempl_{it} + \mu_{it} \tag{1}$$

Subsequently, several different panel regression estimations were made. Similar procedure as in Kureková (2015) was applied to find the most appropriate model, the panel regression estimations are presented in Table 3. In the first step, two basic panel regression, fixed-effects panel regression (FE) and random-effect panel regression (RE), were estimated. In the second

step, it was determined which of these two models is more appropriate. Using the Hausman test and the parametric test, it was found that the FE model could be preferred to RE model. It was also found that within FE panel regression estimation appeared cross-sectional dependence (Pesaran's CD test; P=0.000), autocorrelation (Wooldridge test; P = 0,0000) and heteroskedasticity (Wald test P = 0,0000). To try to mitigate the consequences caused by the problems mentioned above, the FE model with option vce(cluster) in STATA was estimated. In the case of autocorrelation and heteroskedasticity, literature suggests using an alternative estimation method. Parks (1967) suggests using an estimation of the so-called feasible generalized least squares (FGLS). In such a case, it is necessary to be careful that this method is not recommended to use for data sets containing a large number of N and a relatively small number of T. It may seem that our data set (N = 21, T = 7) does not meet the required condition, however, N is relatively small and only three time larger than T. Due to the problems with FE regression, two FGLS regressions were estimated.

4. Results and Discussion

To estimate the impact of globalization on health were used data covering the period between 2008 and 2014, unfortunately a longer time period was not available. A total of 21 time series of EU Member States were available. Change in health can be measured in many ways, a proxy variable life expectancy has been selected in this study; in the future, it would be possible to extend the study to other indicators to complete a complex picture of the effects of globalization on health. The results of static panel data models helped answer the question of whether globalization affected the health in the EU countries. Five econometric models were estimated, followed procedure of tests that led to the selection of 3 models that appeared most appropriate. The results are presented in Table 3.

Table 3: Results of static panel data models

Model	FE_VCE_CLUSTER		GLS_corr_AR1		GLS_corr_PSAR1	
Variable	coef	SE	Coef	SE	coef	SE
G_TRADE	0.061**	0.022	0.058***	0.013	0.090***	0.016
G_FADD	0.017	0.023	0.005	0.008	-0.026**	0.011
G_FEMPL	0.015	0.028	-0.024***	0.006	-0.020**	0.008
_cons	1.854***	0.022	1.921***	0.006	1.957***	0.013
note: .01 - ***; .05 - **; .1 - *;						

Source: (own calculation based on Eurostat and OECD)

Table 3 shows that the Export / Import ratio (g_trade) had a positive effect on the increase in life-expectancy (h_le), globalization in this sense had a positive effect on health. For the other two proxy variables, their influence may seem ambiguous, as the coefficient of Value Added in Foreign Controlled Enterprises (g_fadd) in the first two models is positive and in the third model is negative. In the case of the coefficient for the variable Employment in Foreign Controlled Enterprises (g_fempl) is positive for the first model and negative in two remained models.

Given that all three estimated coefficients were statistically significant at 5% significance level for regression GLS_corr_PSAR1, this model was used for the following interpretation of the results. From the results in Table 3, it is possible to see that the increasing Export / Import ratio positively affects LE, but the increasing percentage of g_fadd and g_fempl decreased

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LE. It can be concluded that globalization represented by selected indicators would not had only positive health effect.

5. Conclusion

Globalization has often seen as an economic process which is focused primary on trade, information, goods, people and their movement. Nowadays, we can see the changes in this worldwide concept. Globalization is becoming increasingly as a more complexly phenomenon which includes also a significant social, cultural and environmental aspects with health effects.

Health effects are not very often solved in research papers, of course some researches exist and selected approaches and studies which are in connection with globalization-health link are presented in this paper. As we can see there are different views on this topic.

We have chosen the approach with using the indicator Life expectancy and selected three indicators of globalization for our research. The empirical part of our paper aimed to investigate health effect of globalization in EU countries using static panel data model. As the results of static panel regression models there is positive significant effect of Export / Import ratio on LE, but there are negative effects of increasing percentage of Value Added in Foreign Controlled Enterprises and increasing percentage of Employment in Foreign Controlled Enterprises. Therefore, it cannot be stated that globalization represented by selected indicators had solely positive health effect.

Our research has brought further questions to address in the future: (i) expanding the model by explanatory variables; (ii) testing how the model will work for other proxy variable of health. So, we are sure that there exists space for future research activities in part of global-health link.

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ANALYSIS OF METHODS MEASURING COUNTRY RISK ON GLOBAL BOND AND STOCK MARKETS

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Abstract. The capital market in each country has its own specific features compared to the global capital market. These differences reflect the different risks of investors who invest in one of the national capital markets. For the investor, it will therefore be extremely important to know how best to measure the country risk and to be able to respond to this risk in a timely manner. Currently, we can find several research studies which examine the different methods of country risk and the empirical relationship between sovereign rating of a country and the components of its capital market. In our contribution, we will focus on two different methods of the country risk measuring. On the one hand, we have a sovereign rating method that measures the credit risk of the issuer (state). Using this method, we analyze in more details individual indicators used by credit rating agencies in the process of assessment the country credit risk. In contrast, we will use market based method - bond spreads, which responds more flexibly to the market situations. Similarly, the country risk in the stock market can be quantified - risk spreads on the stock market, warns the investor almost instantly about the emerging market situation.

Keywords: government bonds, stock market, country risk, sovereign rating, risk spread

JEL classification: G12, G19, E00

1. Introduction: Literature Review

In 2008, when the financial crisis hit the world, investors had to rethink their financial decisions about choosing the right country for their investments. Enormously growing risk spreads had been pure evidence of increasing risk of countries in the Eurozone. In the past we could meet some synonyms of the country risk. Country risk is also referred to as *sovereign risk*, *political risk*, *country risk* or *cross-border* risk in various literature, with some authors identifying and understanding the terms as synonyms, while some others emphasizing that there are differences between concepts that cannot be considered synonymous (Bouchet et al. 2003).

In financial theory, we come across the term country risk as a category which includes not only economical, but also political and financial risk. The PRS Group and its well-known author Howell (2013) in The Handbook of Country and Political Risk Analysis characterize

the International Country Risk Guide (ICRG). This rating comprises 22 variables in three subcategories of risk: political, financial, and economic. A separate index is created for each of the subcategories. The Political Risk index is based on 100 points, Financial Risk on 50 points, and Economic Risk on 50 points. The total points from the three indices are divided by two to produce the weights for inclusion in the composite country risk score. The composite scores, ranging from zero to 100, are then broken into categories from Very Low Risk (80 to 100 points) to Very High Risk (zero to 49.9 points).

The Political Risk Rating includes 12 weighted variables. Political risk reflects the stability of the government, internal and external conflicts, level of corruption, level of judiciary and law, level of international relations and external conflicts. The economic risk reflects macroeconomic indicators such as GDP per capita, economic growth (GDP growth in %, annual inflation rate, state budget deficit and debt ratio relative to GDP) or balance of payments. The third category, financial risk measures part of country risk through indicators such as foreign debt (% GDP), foreign debt in relation to exports, exchange rate, and so on. It can be said that the country risk covers a multitude of problems that are often analysed as partial quantities, quantified by different statistical methods and econometric models.

Especially, the area of political risk is examined by Bush & Hefeker (2007), which processed 83 emerging countries from the point of view of foreign direct investments and activities of multinational corporations. Braga & Alves (2018) concluded, that investors to make a more informed assessment of political risks associated with democratic stability, economic development, government effectiveness, civic cohesiveness and international integration.

The publications of foreign and domestic authors currently encounter the fact that specifically examines the country risk separately for the bond market and the stock market. The country risk associated with the bond market is mainly focused on the credit risk or the insolvency of the country. On the other hand, the country risk on stock market can be understood like a potential threat to investors who are investing in this market, as well as the companies that want to enter the market. Sovereign ratings are used to evaluate the credit risk of the country. The rating considers, in particular, the factors that affect a country's ability to fulfil its obligations of the issued bonds in time and in full. These are primarily financial indicators like level of debt, deficit, debt or deficit to GDP, etc. On the other hand, bond spreads are used to measure the country risk not only on the bond market, but also on the stock market. These spreads are more sensitive to market changes and are characterized by higher volatility.

Beirne & Fratzscher (2013) analysed country risk determinants like public debt/GDP, real GDP growth or current account/GDP to CDS spread in 31 countries. They found that there is a "wake-up call" contagion, as financial markets have become more sensitive to countries.

Maltritz & Molchanov (2013) analysed determinants of country default risk in emerging markets reflected by sovereign yield spreads. They stated that total debt, history of recent default, currency depreciation, and growth rate of foreign currency reserves as well as market sentiments are the key drivers of yield spreads.

Arghyrou & Kontonikas (2015) also examined the determinants of bond yield spreads in the EMU and found that the menu of macro and fiscal risks priced by markets has been

significantly enriched since March 2009, including international financial risk and liquidity risk.

Silvapulle et al. (2016) investigated the contagion effects in the daily bond yield spreads (relative to Germany) of five peripheral EU countries as a consequence of the recent euro-debt crisis. They found evidence of financial contagion effects. In globally interconnected financial markets, central bankers and policy makers are concerned about contagion.

Aristei & Martelli (2014) analysed the impact of behavioural factors on sovereign bond yield spreads in the Euro area. The authors found that the behavioural indicators considered, such as proxies of consumer and market sentiment and expectations, strongly affect spreads' behaviour, especially during crises.

Eichler (2014) examined the political determinants of sovereign bond yield spreads and found that political determinants have a more significant impact on sovereign bond yield spreads in autocratic and closed regimes than in democratic and open countries.

The working paper from Haugh et al. (2009) is dedicated to the government bond's growing risk spreads in countries of the Eurozone during the financial crisis of 2008-2009. They compare yields of government bonds of individual countries to German government bonds (Bunds). They see the problem of high spreads in the inefficient and deficit economy of countries, as well as higher investor risk aversion during crisis.

Bernoth et al. (2012) stated that interest rate differentials between bonds issued by EU countries and Germany or the USA contain risk premiums which increase with fiscal imbalances and depend negatively on the issuer's relative bond market size.

Much attention was given to this issue, especially in connection with the insolvency of Greece. Chionis et al. (2014) examined the impact of major macroeconomic indicators on government bond yields and growth of risk margins in Greece. They found that the most significant factor during the crisis era was government deficit. On the other hand, debt to GDP ratios do not play any significant role.

Reusens & Croux (2017) compared the importance of different sovereign credit rating determinants over time, using a sample of 90 countries for the years 2002–2015. After the European debt crisis in 2009, the importance of financial balance, economic development and external debt increased substantially and the effect of Eurozone membership switched from positive to negative. For highly indebted countries, GDP growth gained a lot of importance, and on the other side, the government debt became more important for countries with lower GDP growth rates.

Margaretic & Proger (2018): in your paper studies the impact of a country's extra financial performance on its sovereign bond spreads.

Sunil & Thomas (2014) they that to conclusion, that during the sovereign credit crisis only fiscal factors appear to affect the credit spreads while international risk factors have had little or no impact on the sovereign credit spreads.

However, credit rating agencies are often criticized. The problem is that issuers pay for the required rating, so it can be assumed that the agency is too optimistic when evaluating the issuer. If one of the agencies changes the rating of the state, other agencies will do the same, so we cannot talk about agency independence. Another disadvantage is the too-long rating

process. According to Damodaran (2015), credit rating agencies are reacting too late to a rating change, exposing the investors themselves to risk.

At the time of a crisis, it is assumed that credit rating agencies will overreact and aggravate credit ratings for issuers who would not otherwise undermine the rating, which will have market feedback and will only deepen the problem. Bhatia (2014) lists several of the following reasons why credit rating agencies are failing: information problems, limited human resources, revenue bias and other incentive problems.

2. Aim and Methodology

The goal of this contribution is to show the importance of the country risk, which has become more important in recent years because of the debt crisis in the Eurozone. Also, we will quantify the country risk by two different methods. First, we look at the sovereign ratings of individual countries. The second, market-based method is simply the difference between yield to maturity of a 10-year bond of a risky country and that of a 10-year bond of a risk-free country. To be able to compare the results of these methods, we will assign spreads in basis points to sovereign ratings according to table 1. The point of this contribution is to prove that changes in sovereign ratings could be forecasted by market-based method of measuring country risk. We will quantify the country risk of Italy. We will be examining the period from 1998 to 2018.

Country ratings focus mostly on the macroeconomic factors that would affect a country's ability to repay its debt and avoid defaults. On the other hand, bond spreads reflect current market situations. So, we assume that the market can react in advance to potential threats. The purpose of this paper is to try to prove that a market-based method can forecast changes in sovereign rating.

Emerging markets don't have government bonds denominated in foreign currency but in case they have a set rating from one of the world's rating agencies, we can determine the spread of these countries. The method assumes that countries with similar credit risk should have the same rating and based on this, we assign a given country spread.

Table 1: Rating and default spread. January 2018

investment grade									
Rating	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3
Spread	0	41	51	62	72	87	123	164	195	226
speculative grade									
Rating	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca
Spread	256	308	369	462	564	667	769	923	1025	1230

Source: (own processing based on www.stern.nyu.edu)

In the table above, we can see individual risk spreads in basis points assigned to country ratings. For our measure, we choose Moody's rating agency. In our case, Germany has the best credit rating, so the country's risk premium is 0. Both Italy and Spain have a rating of Baa2 with a spread of 195 basis points. That means that bond yields of Italy or Spain should be higher by 1.95 percentage points than bond yields of German Bunds.

Investors who don't think that rating and scoring are sufficient and reliable methods of measuring country risk can use one of the alternative **market-based methods**. Investors see

the advantage of these methods and that the results reflect the actual situation on the market. It should be noted that they are characterized by frequent fluctuations in comparison with rating or scoring evaluations. These fluctuations are caused by market reactions to different events or irrational behavior of market participants which explains the psychological analysis. According to Damodaran (2016), one of these market-based methods is default spread. The risk premium is calculated according to equation 1 as the difference between the yield to maturity of the bond of country X and the yield to the maturity of the bond of a risk-free country. This difference tells us about the country X's risk; the bigger this difference, the more risk the investor assumes when it comes to the country's financial market. For the purpose of this paper we will use data of yield to maturity of 10-year bonds of countries Greece, Spain and Italy, and for a risk- free country, we choose 10-year German's bunds.

$$bond\ spread\ YTM = YTM\ of\ 10Y\ bond_{country\ X} - YTM\ of\ 10Y\ bond_{risk\ free\ country} \quad (1)$$

In this work, we used data from different databases. We used mathematical and statistical methods to compile acquired data. We processed the data from the Eurostat database and available sites, www.tradingeconomics.com and www.yahoofinance.com, along with the ECB published data on www.ecb.org, www.oecd.data.org.

3. Results

During our examining period, we could see several important events in the financial markets. The first event was the technological bubble, also known as the "dot.com" bubble, which popped up in the early 2000s and caused huge losses for stock markets. However, spreads in the 2000s showed small volatility and therefore, the technology bubble affected not only the stock markets, but also the bond markets. During a market crisis, investors demand "safe haven" assets like bonds or gold. This causes the bond yields to fall. It is true that bond yields of our selected countries fell, but those movements had the same trend. In other words, the dot.com bubble and its collapse didn't affect the terms or the country risk, because the phenomenon didn't make any changes to the riskiness of our selected countries. Another case of crisis was the mortgage bubble in the US market in 2008. The core of this bubble was the fact that US banks provided mortgages to risky clients.

Figure 1: Italy – macroeconomic indicators
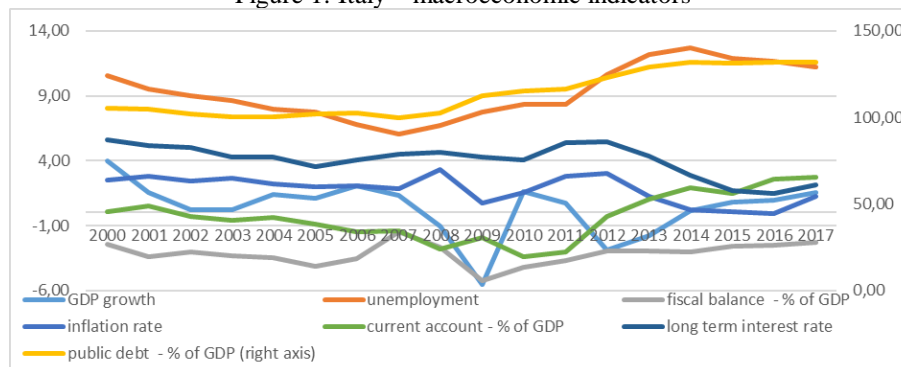
Source: (own processing based OECD Data)

These kinds of mortgages, when the borrower is very risky, are known as subprime mortgages. In the next step, banks sold these assets to other financial institutions via securitization. The mortgage problem became a worldwide problem through these financial

operations. Because of factors like level of globalization and specific relationships between financial institutions of different countries, we saw and experienced a worldwide crisis. In the first half of 2008, we saw growing spreads of government bonds. In 2011 and 2013, we saw enormous increased risk spreads for countries like Italy and Spain, because of disproportionate growth of government debt in those countries. Since 2014, we have seen relatively stable spreads; however, we can also see the different spreads of countries with different ratings. Since this moment, investors have begun observing and marking differences between the countries of Eurozone. They have started understanding and measuring the risk associated with investments in government bonds of risky countries. It should be noted, however, that during the stock bubble in 2000s, spreads slightly increased. In 2008, during the mortgage bubble in the US, we saw increased spreads. But we are talking about extreme growth from 2010–2014 because of debt crisis in the Eurozone.

As shown in the following table, the rating development has a decreasing trend and is approaching the hazardous area - C - with a high risk to the investor. This decreasing tendency is mainly due to the high unemployment rate coupled with rising public debt and relatively low GDP growth rate. This is also the reason for relatively worse rating within Europe. Together with the political risk, which has increased mainly due to the composition of governmental parties in Italy, it also creates the conditions for a future downgrading of the rating.

Table 2: Changes in sovereign rating/outlook for rating of Italy from 2000 (Moody')

	1.1.2000	1.5.2002	1.6.2011	1.10.2011	1.2.2013	1.7.2013	1.2.2014	1.12.2016
Rating	Aa3	Aa2	Aa2	A2	A3	Baa2	Baa2	Baa2
Outlook	Stable	Stable	Negative	Negative	Negative	Negative	stable	negative

Source: (own processing based tradingeconomics.com)

High public debt is currently the main problem of the Italian economy, which is ultimately reflected in the level of yields of Italian government bonds. Italy too has been affected by a low economic growth. The increasing public debt as part of GDP in recent years has been caused by a low, sometimes negative economic growth, as well as low inflation. Low inflation causes an increase in real interest rates, and therefore, the dynamics of Italian economy are getting worse. Italy's debt problem is a long-standing problem which can trace its roots back to 1999, when it adopted a common currency, the Euro, and became a member of the Euro area. Italy had undertaken to reduce the level of debt from 110% to 60% of GDP on entry into the Eurozone. It has accomplished this criterion, but only partly. In 2008, many countries were forced by the financial crisis to spend a considerable amount of money to support the economic recovery. In 2009, efforts to improve the situation in the fiscal area were renewed. The project EDP—Excessive Debt Procedure was launched in the same year, too. The purpose was to ensure better management of public funds. Since that year, we are watching decreasing public debt in Italy. The deficit was at 5.3% in 2008, while it was at 2.6 % in 2016.

The development of bond spreads in Italy is very similar to that in Spain. In 1999, we can see a little volatility. From 2000 to 2007, we are seeing a very low volatility of bond spreads. In May 2002, the sovereign rating of Italy was decreased from Aa3 to Aa2. From 2007 to 2011, we see a rise in bond spreads. Consequently, in October 2011, the Italian rating was downgraded to A2. In the coming years there will be some further downgrades of the sovereign rating of Italy to Baa2. Extreme jump in bond spreads in the period 2011-2013 can

be considered as an overreaction, but even in this case rising bond spreads prevent downgrading of sovereign credit rating of Italy. In 2016, we can again see rising bond spreads. Actually, the outlook for sovereign rating of Italy is negative, so we can expect another downgrading of Italy's rating.

Figure 2: Bond spread and rating based spread (in BP) in Italy between 1998 and 2018.
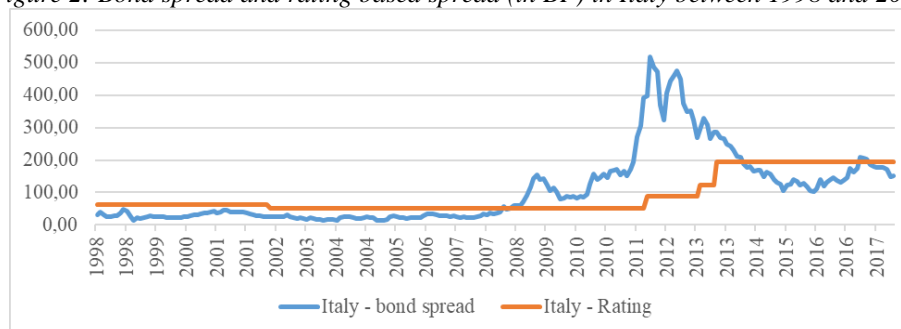
Source: (own processing based on ec.europa.eu/Eurostat)

4. Conclusions

As we can see, the trend of bond spread as well as sovereign rating was very similar in the Italy. At the beginning of the reference period 1998-2000, we were able to see a small volatility in bond spread. Between 2000 and 2007, volatility of bond spreads was either minimal or none. During this period, the macroeconomic indicators developed positively, and the sovereign rating was improved (Italy 2002 on Aa2) with a stable outlook. In the period from 2007 to 2012, we saw a sharp increase in bond spread, and in the coming years the deterioration of sovereign rating. Spread subsequently declined, with the rating of the country remaining unchanged. We can assume that the sharp increase in bond spread has been overreacted, but in any case, preceded the downgrading of sovereign rating. So, we can assume that those overreacted increased predicted changes in sovereign ratings and served as a warning signal. Bond spread in Italy has shown a rising trend with actual negative outlook, so we can predict a possible downgrading of sovereign rating of Italy. The purpose of this contribution was to compare two methods for measuring country risk and to find out whether the market can predict the possible deterioration of economic conditions in a country. We can conclude, that we fulfilled the purpose of this paper.

Acknowledgement

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SUSTAINABILITY CHALLENGES IN GLOBALIZED WORLD

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Abstract. Sustainability is without a doubt a mega-trend today. Consumers, politicians and even the companies are paying more and more attention into this matter. The globalized world markets have changed the world dramatically during the last century. Unfortunately, the development has been in many cases environmentally, economically and socially unsustainable. The globalized economy has made some countries richer than ever, but the development has not been equal. The unsustainable utilization of natural resources and human labour has created an unsustainable world with unprecedented wealth and well-being in rich industrial countries and serious environmental problems, corruption, inequality and human rights violations in many developing countries. Everybody can see the challenges of environmental sustainability, but those are in most cases caused by the challenges of social and economic sustainability. While the gap between poor and rich becomes ever bigger, the economic sustainability challenge cannot be overlooked. When a person, a company or a country is struggling economically, the aspects of environmental and social sustainability are easily overlooked or neglected. In addition, the social unsustainability which can be seen in corruption, lack of democracy and all forms of racism must be dealt with. In this paper, the existing sustainability challenges will be researched in the viewpoint of a rich developed country like Finland. How the sustainability challenges involve Finland and how the people, companies, organizations and country of Finland can have a positive impact on global sustainability on all the three dimensions of it.

Keywords: sustainability, globalization, global trade

JEL Classification: F18, F60, J31, Q56

1. Introduction

Today people all over the world are growingly concerned about the future of our planet. Recent abnormal weather phenomenon, economic and political challenges and visible changes in our world have brought an important question in our minds: what is happening, how the world is changing and - above all – can we affect any way the change?

1.1 Sustainability

In the Encyclopædia Britannica the concept sustainability das defined by James Meadowcroft as "*the long-term viability of a community, set of social institutions, or societal practice*" (Meadowcroft, 2017). The concept sustainable development has been defined

according to Cheever and Campbell-Mohn as "*an approach to economic planning that attempts to foster economic growth while preserving the quality of the environment for future generations*" (Cheever et al., 2016).

The first definition of sustainable development was described in the famous Brundtland Report in 1987: "*Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs. The concept of sustainable development does imply limits - not absolute limits but limitations imposed by the present state of technology and social organization on environmental resources and by the ability of the biosphere to absorb the effects of human activities. But technology and social organization can be both managed and improved to make way for a new era of economic growth.*"(Brundtland, 1987).

1.2 Globalization

What is globalization? According to the IMF "*Economic "globalization" is a historical process, the result of human innovation and technological progress. It refers to the increasing integration of economies around the world, particularly through trade and financial flows. The term sometimes also refers to the movement of people (labour) and knowledge (technology) across international borders.*" (IMF, 2000). As a phenomenon globalization has been an integral part of human culture and development since the dawn of humanity. Migration and trade have both developed and expanded the sphere of human life and culture. People, goods, knowledge and ideas have travelled through the world. Since Adam Smith and Anders Chydenius it is also widely recognized that free international trade is one of the cornerstones of global economic development.

2. Sustainable Globalization

As the concepts of sustainable development and eternal economic growth are at least in some extent contradictive, the challenge is to find out, how the global economic growth can be achieved according to all the sustainability requirements.

Figure 1: The Club of Rome prediction of future trends and limits of growth

Source: (https://damnthematrix.wordpress.com/2012/04/11/so-much-for-debunking-the-club-of-rome/)
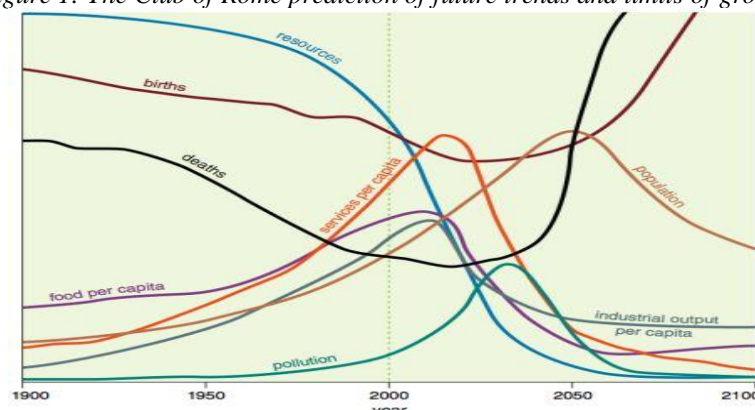
The globalization has been a significant factor in both historical and especially recent economic, social and environmental development throughout the world. Especially the material well-being of industrial world would not be even possible without globalization.

Global markets of raw materials, labour and industrial goods are the key elements of the modern globalization. (Hussain et al., 2018) Eventually globalization has been recognised as the cause and consequence of a modern industrial and commercial development and during the last 30 years significant emphasis was put into further liberation of international trade. (Varadarajan, 2017) The world was step by step, agreement by agreement, approaching once almost utopic state of full freedom.

Then all changed. Since the economic shock of the year 2008 financial crisis the world has took several steps backwards on globalization. Because of the recent immigration / refugee crisis of Afghanistan, Iraq, Syria and Africa, the industrial countries have obtained more critical attitude on immigration. Especially inside the EU, there has been lots of disagreement between the member countries how to deal the situation. Since 2015, so large quantities of immigrants have come into EU territory that people even in the most immigration friendly countries like Germany and Sweden have become growingly sceptic and extreme political movements have gained popularity. Countries like USA, Canada and Australia have become very selective on their immigration policies. (Al-Amin et al., 2018; Dangelico et al., 2017)

When the Russia took over Crimea peninsula and later UK decided to exit from the EU and when Mr. Trump was elected as the president of the USA the world trade has experienced series of political trade embargoes, punitive import taxes/tolls and instead of making the global trade easier we have now trade wars at our hands. During the last couple of years, the attitude towards free globalization has flipped almost backwards. There is no signs for better – especially between the USA and China both countries are just raising the stakes and even all-out trade war is not out of the question.

The world have experienced between 1990 – 2008 an unprecedented period of growth and prosperity in almost everything because of global economic and political liberalization. Was this recent surprising and rapid anti-globalization development just inevitable because of underlying political imbalance caused by world changing too fast and challenging the traditional geopolitical and economic balance – or is it an error which can be fixed? Is this anti-globalization trend just something that may go away as fast it appeared, or is there some systemic problems in the globalization of recent decades?

According to Oxfam International 82% of the wealth generated year 2017 went to the richest one percent of the global population, while the poorest half of the world experienced no increase in their wealth (Oxfam International, 2018).

2.1 Environmental Sustainability Challenge

By using the original definitions of Herman Daly (Daly, 1990) environmental sustainability can be defined in a nutshell as follows: "*Environmental sustainability is the rates of renewable resource harvest, pollution creation, and non-renewable resource depletion that can be continued indefinitely. If they cannot be continued indefinitely then they are not sustainable.*" (Thwink.org, 2018a) In terms of sustainability it can be said that: environmental sustainability must have the highest priority, because the lower the carrying capacity of the environment, the lower the common good delivered by the social system and the less output the economic system can produce (Thwink.org, 2018b).

Our existence in this planet depends on the living conditions of it. The nature is changing constantly and many changes are not positive for our existence. The big challenge is the

impact of our activities into environmental changes. (Bask & Rajahonka, 2017) Known examples are problems with the ozone layer, greenhouse effect caused by CO_2 and air, water and land pollution.

Figure 2: Population and consumption growth 1850 onwards
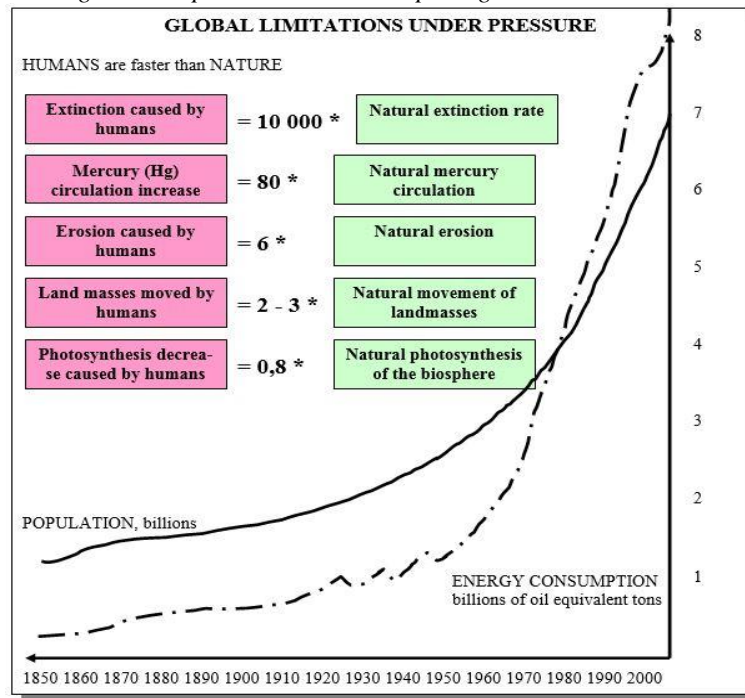
Source: (Author)

As an important measurement of sustainability, the Ecological Footprint is a com-mon tool to evaluate the exposure of natural resources. In this regard, measurements take place on 'how fast we consume re-sources and generate waste' (Global Footprint Network 2018a).

Figure 3: Ecological Footprint Map
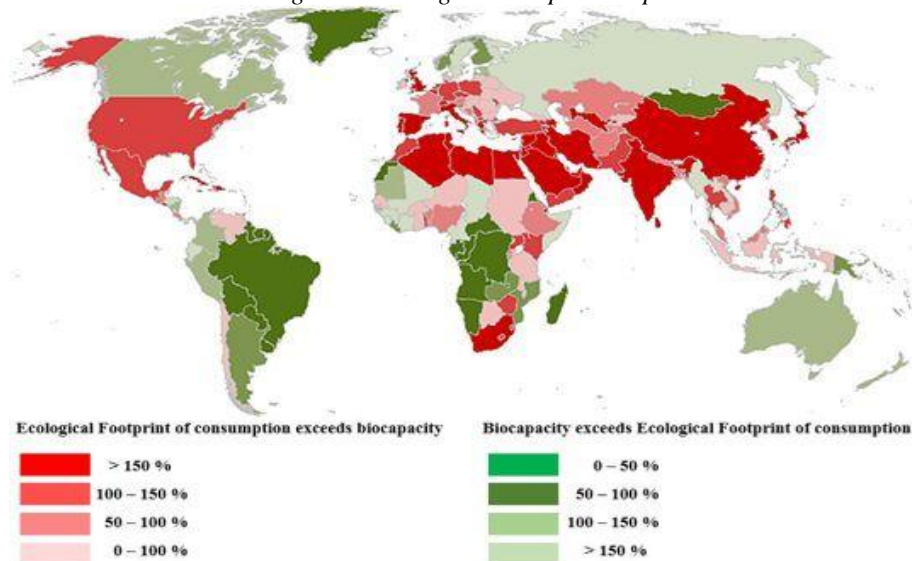
Source: (Global Footprint Network, 2018b)

In addition, the ecological footprint evaluates two sides which are demand and supply of nature in order to successfully measure the impact or necessaries. Measuring demand by

looking at the ecological assets given that are needed in order to reproduce used natural resources by the society (Global Footprint Network 2018a).

Figure 4: Fossil fuels and renewables in Finnish primary energy production 1970–2016
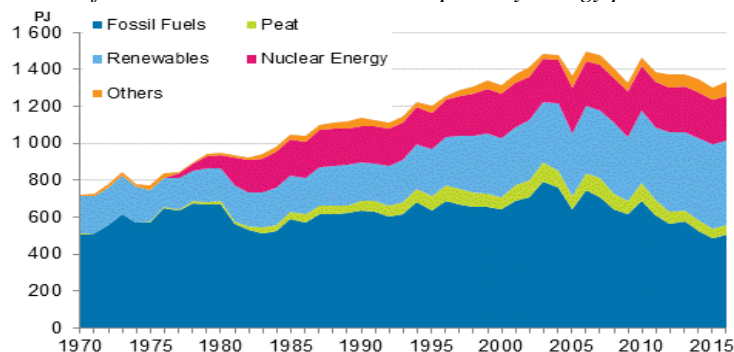
Source: (Official Statistics of Finland (OSF), 2017).

As seen at the Figure 3 the EU area has generally quite unsustainable ecological footprint. Only the Scandinavian countries (Denmark, Finland, Norway (not an EU-member) and Sweden have relatively sustainable footprint. This can be explained by the high level of renewable energy production (wind, waterpower and biomass) and wide usage of timber as renewable industrial raw material. The share of renewables in the Finnish primary energy production is over 30% and when the usage of nuclear energy is included the usage of fossil fuels is about 42%, which is far less than the European average.

2.2 Social Sustainability Challenge

Social sustainability is maybe the least appreciated when we normally think about sustainability. Environmental sustainability has been in headlines for decades and we generally understand it. Also the economic sustainability is quite well understood. How we see and understand the social sustainability? Social sustainability can be seen as empathy, a sense of community, warmth, encounters. Social sustainability is the human network, which is surrounding us and defining the world and our role in it with other human beings. In rich and developed countries like Finland we have become so busy with our demanding business and with our hectic life that we are not always aware about our interconnection to other people around us in both local and global sense. According to Anne Birgitta Pessi (Pessi, 2017) the information flow overwhelms us and in this busy life, exhausting news and a constant sense of urgency, we have more or less lost the ability to be compassionate – locally and globally. In the socially sustainable world the compassion for other people, for humanity, for nature and for our only world is the true core of all sustainability.

Social sustainability can also be seen as a way of identifying and managing business impacts, both positive and negative, on people at the global perspective. (Lo & Kwan, 2017; Munzel et al., 2018; Hervani et al., 2017) The policies and activities of companies affect what happens to employees, workers in the whole global value chain. (Croom et al., 2018) Of course, the company management wants the company to be profitable. But profitable to whom? Do we practice our profitable business in a compassionate way, in which we do not exploit any natural or human resource near or far away in a destructive manner – or are we just considering our short-term local profitability instead of long-term global sustainability?

The Finnish imports from low cost countries can be divided into two categories: 1) lower cost countries at EU and 2) low cost countries overseas. In advanced countries like Finland the companies and of course the consumers must be aware of the social conditions of the workers in low cost countries – is the low cost level achieved by neglecting the basic safety, worktime and salary standards? If so, what can be done to improve the situation? As consumers we are making the final decision between different alternative products based on our preferences. Do these preferences emphasize social sustainability or are we only looking for the cheapest price?

2.3 Economic Sustainability Challenge

The most important element of economic sustainability is that a business must be profitable. This must be achieved in both environmentally or socially sustainable way. The business world is not operating in without interaction with other aspects of life and economy. The main idea of the market economy is to provide services or goods customers require and create profit. Of course, the profitable business is important, but not at any cost. Important elements of economic sustainability include compliance, proper governance and risk management. Business sustainability can be seen how companies manage their financial, social and environmental risks, obligations and opportunities. It represents resiliency over time and businesses, which are sustainable are able to create economic value and contribute to healthy ecosystems and strong communities. (Financial Times, 2018)

Another important element of economic sustainability is that every human being must have equal possibilities for economic prosperity. The quantity of wealth is not a problem; theoretically there is adequately wealth in the world to meet the needs of all the peoples. According to the latest estimations the global wealth is about 1 143 trillion USD (Lange et al., 2018) which is about 150 000 USD per capita. The problem is that the wealth is very unevenly distributed and majority of the world population have absolutely no possibilities to accumulate this kind of wealth - despite how hard working they are. It is reality that majority of the world population can only dream about the working conditions and salaries of the rich industrialized countries. This is the challenge of economic sustainability: how we can create a world, where equal work input in a farm, factory or public position would be remunerated approximately equally everywhere. In the modern globalized world this unsustainability is mostly utilised by offshoring or outsourcing industrial activities from developed higher labour cost countries like Finland into less developed low cost countries and this way significant got efficiency can be achieved. Of course this offshoring and outsourcing creates new working places into developing countries what would be great, if only the basic work safety, working hours and minimum wage rules, which are commonly protected by strict laws in rich and developed countries, would be followed also in developing countries. In some cases production methods and processes, which are strictly limited or banned because of their dangerousness in developed countries, are just outsourced to less developed countries whose have not yet issued equal limits or bans.

3. Conclusion

As the concepts of sustainable development and eternal economic growth are at least in some extent contradictive. Understanding the impact of every action on the surrounding

environment, social conditions and economic equality is crucial to improve the current situation in a planet, which seems to be far from sustainable. Climate change, over-population and running out of natural resources are important issues to take into consideration. The world is facing some serious issues regarding sustainability, which have been under heavy discussion during the past decades. There are a number of economic, social, demographic and environmental mega-trends underlying the explained challenges such as cultural diversity, environmental degradation or a deeper globalization. Businesses as usual are therefore not anymore viable option. The sustainable development will require changes at the local, national, and global levels. Since 1990's the world's sustainability situation has severely weakened due to technological development that has not contributed on sustainability. Therefore, it is humanity's task to start effectively working together on solutions. We must all make our mind on our political, industrial or especially consumption decisions: do we want to be part of the solution or do we want to be part of the problem.

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NEW GLOBAL PHENOMENA IN THE SPHERE OF WORK AND CONSUMPTION AND THE QUALITY OF LIFE

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Abstract. In the contemporary globalised world constant changes occur which affect every sphere of human existence in almost every country around the world. The technological development as well as economical and cultural globalisation cause changes in many different spheres of human life, among others in the sphere of work and consumption. These conditions influence the most important human behaviour and consequently human satisfaction and quality of life. Among others the following changes in the sphere of organizations occur: task orientation, diversity of activities within organization, more flexible employment, non-linear organization of tasks and elimination of hierarchy and development of networks. The newest communication technologies have a significant impact on the way people work and consume. It creates many possibilities and make people's life easier, yet it may also have a negative impact on the human well-being or work-life balance. The newest phenomena in the work and consumption are challenges, which may bring many benefits, but also pose some threat to the psychophysical well-being of an employee. The aim of the article is to present the newest global phenomena in the sphere of work and consumption and their potential effect on the peoples' quality of life on the example of the citizens of Polish city Czestochowa.

Keywords: globalisation, work, consumption

JEL Classification: D12, J5, J28

1. Introduction

Modern globalised world is undergoing constant economic, technological and social changes. These new phenomena concern every aspect of human life, starting from the sphere of work and ending with the private life, including consumption. Changes do not always bring people higher level of quality of life and not lead to satisfaction and psycho-social well-being. New amenities in the technological sphere result in many benefits in terms of breaking the boundaries of time and space of the globalised world and enable diffusion of cultural and economical values, patterns of behaviour and activities, unification of economic markets and legal standards. Yet, sometimes it becomes also a burden, increases competition, pressure on the employees, entrepreneurs, creates social exclusion, deepens the inequalities, negatively influencing the level of quality of life.

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The awareness of the possible problems connected with new consumer and labour market trends in the globalized world may help to prevent and reduce harmful and threatening phenomena and trends, enabling to keep high level of quality of life and psycho-social well-being of an individual. The aim of this article is to analyse what are the main new global phenomena and how they influence the quality of life of people as employees and consumers and present some research on this subject concerning the Polish socio-economical context.

2. Theoretical background

As many scientists point out progressive globalization enables such phenomena as: digitalization, facilitating spreading of information and knowledge, the development of the Internet as well as mass media, which favours homogenization of the sphere of culture and consumption. Globalization intensify technological progress, including development of communication technologies, migration phenomena, the emergence of new rules for the international division of labor or the convergence of economic orders towards a free market system. (Fryzeł, 2008; Lebedintseva et al., 2018; Dimitriu, 2016)

According to Euromonitor 2005 data (as cited in: Tkaczyk, 2012), the main trends in 2005-2015 were: the enrichment of rich people, increased migration, aging of societies, the phenomenon of coconization, so-called media on demand, dissemination of access to the Internet and the development of mobile technologies. In modern, highly developed societies, life expectancy is prolonged and, at the same time, the number of children is reduced. Moreover, the disproportions between rich and poor people deepen. People from poorer regions migrate to more developed countries in order to find better job and a dignified life. This is facilitated by progressive globalization and the free movement of labor in Europe. People turn to the privacy of their homes. It is at home where, thanks to the development of communication and services, they do what previously required leaving the house. In the majority of European Union countries, the population is declining. The countries of Central and Eastern Europe experienced the greatest decline, whereas in Western Europe it is offset by the inflow of immigrants .

According to research of Olejniczuk-Merta & Nowacki (as cited in: Tkaczyk, 2012) on contemporary consumption in Poland the trend of child-centeredness, the search for authenticity or simplicity, the trend of emancipation of women and the masculinity crisis, the trend of seeking privacy the trend of "catching opportunities" are among the important trends shaping the Polish consumer.

New kind of consumer looks and shares the information about consumption very often. Internet enables communication between consumer and also promotes creation and dissemination of consumer behaviour patterns. So called global brain appeared in the virtual space of Internet. It can be described as sharing and accumulating knowledge about the producer sand their products as well as the market. The Internet and global brain phenomena becomes the main source of information and is the basis for decision-making, especially for the young consumers (Karczewska & Bsoul-Kopowska, 2016)

Most and most common global trend, however mainly in the wealthy regions, is the common use of the Internet as a communication tool as well as the tool for creating the image of the product and the enterprise (Denegri-Knott & Molesworth, 2010). It shortens the time required to response to consumers needs and requests and quicken the communication

process. Moreover, the Internet is used to stimulate the need for the product and adjust the product to the personalized needs of a consumer. What is more, new fields of activity for the providers of services focused on sports activities, decorating home and the idea of wellness (spiritual and physical) appear. New target groups as well as new service spheres designed for these groups occurred (e.g. children's recreation, healthcare and rehabilitation for the elderly). It is also worth noticing that the borders between the mass production and the luxury are being blurred, what as a result changes the target groups for the producers (Karczewska & Bsoul-Kopowska, 2016).

As a result of the rising role of the aesthetic and symbolic aspects of goods, the prestige and uniqueness of goods and services become more and more important. The aspect of goods connected with their usefulness is becoming less important. The emotional and aesthetic aspect are emphasized and most significant in modern global consumption. Romantic ethics, focused on mysticism, imagination, emotionality dominates in consumer activity. In relation to consumption, the purpose is not to acquire and use goods because of their utility, but to look for pleasure, modern hedonism based on an illusory vision of happiness gained by acquiring goods and using services. (Campbell, 1987).

Globalization processes have affected the sphere of work in many ways, creating numerous opportunities as well as threats. One of the most characteristic features of the global labor market are transnational corporations which are characterized by: efficiency, flexibility and innovation, dispersion and complexity. They make use of the global flow of money, people and goods creating international relations and dependencies. Globalization has influenced new principles of international division of labor, as a result of which geographical centers of competence or service centers are created. New phenomena such as outsourcing and offshoring have emerged. They mean moving of job positions in search of cheaper or better qualified workforce in order to reduce costs of production. Another phenomenon related to globalization is labor migration, usually directed from less developed countries to wealthier regions of the world (Majkut & Wojcik, 2010; Kypriotelis, 2016; Greblikaite et al., 2016).

Among others global corporations use the possibility of teleworking, which is remote work, cooperating within virtual teams. Virtual organizations are created, which are spatially scattered, but focused on the common goal achieved through cooperation by using modern information technologies, breaking time and spatial barriers. Work with the use of new technologies is increasing, changing the structure of activities performed in the process of work. This all is possible due to the development of the so-called information society, in which the information becomes one of the most important resources on the market. (Karczewska & Bsoul-Kopowska, 2017) However, the mentioned spread of technology of work can lead to impoverishment of work as well as increase the monotony of work, and sometimes may even lead the complete replacement of human labor by the machine.

New global trends concerning technology and economy open many new opportunities for employees - new positions, international working experience, development of new competences and skills, as well as more flexible time and ways of work or lifelong learning (see: Edwards & Usher, 2001). However, the pressure of continuous development, being constantly informed, following technology development increases.The global competition is also growing and threat of job loss occur. Due to changes connected with globalization, there is a higher risk of lowering human well-being resulting from instability of employment,

changeability of management and working conditions or potential economic problems associate ith global connection of national economies (Anisimov, 2017).

Enterprises which try to adapt to continuous changes in the global market adopt flexible forms of employment, organization of working time and use new communication and production technologies. The rapid flow of information related to technological development, enabling efficient communication and continuous access of employers and clients to employees can contribute to scarcity of time off from work (private life) and destabilize the balance between leisure time and work.

The balance between professional and non-professional life is significant for the perceived level of the individual's quality of life (Przewozna-Krzeminska, 2017). The term quality of life can be understood as the sense of a satisfying and happy existence of a person connected with his emotional attitude to reality. In turn, in more objective terms, it means a standard of living, expressing the degree of realization of human needs and pleasures through the use of goods and services (Leznicki, 2011)

An essential element affecting the quality of human's life is satisfaction with professional activity and quality of work. The basic dimensions as well as the criteria for assessing the quality of work are as follows: type of employment, stability of employment, time of work, career development opportunities and training provided by the employer, status and work control, working conditions and health and safety at work, work content (Employment in Europe, 2001)

One of the material elements of the quality of life connected with resources for goods and services satisfying human needs is consumption. Paradoxically, in the modern world of consumption there is no real long-term satisfaction from consuming goods. The reason is that, according to the ideology of consumerism, the consumer must be constantly exposed to new temptations. The state of satisfaction is not the purpose of consumption behavior, it is the state of unmet and constant search for new experiences which is desirable. "Consumers are first and foremost, impressors; they collect things only secondarily, as derivatives of sensations." (Bauman, 2000) The consumer society is defined as a society of excess and abundance. Moreover, typical for the consumer society is the waste of goods, because the essential element of continuous consumption is to throw away goods, get rid of the old model and replace it with newer, improved one. That is why the role of modern consumption in increasing the level of quality of life may be argumentative and it may have various consequences in human's life, both positive and destructive.

3. Methodology

The article includes own research as well as secondary data from research of other scientists taking up the issues considered. Own research was conducted on the population of the Częstochowa region – consumer research concerned population of young women aged 20-44 and employees research concerned population of the employed, both sexes. The survey method of gathering data was applied with the use of the tool of questionnaire. In the first survey the sample was 390 women and in the second survey the sample was 276 employees. The other researches recalled in the article was conducted on the representative samples of population of Poles. The collected data were analysed with the use of statistical methods and Statistica software.

4. Research data analysis and discussion

One of the main problems connected with the development of new communication technologies may become the continual availability of employees for the employer. The questionnaire included a question if a respondent is always available to his/her employer, even after working hours, during free time (e.g. telephone contact with the supervisor). Around 60% of surveyed claimed that he/she is always available to the employer, of which 23% often, and 36% rarely. This issue does not concern 40% of respondents.

The questionnaire also raised the issue of the extent to which the respondent uses the Internet and its tools in his work. The majority, as many as 58% of respondents use it in a very high and high degree in their professional activity. Only around 23% use it in a low or very low degree.

For the sense of security of the employee in the sphere of work, the level of work stability connected with the low risk of dismissal from a job is important. This stability is generally lower in the conditions of global competition. Therefore, the following question was asked: to what extent does the workplace provide you security/stability of work/low risk of dismissal? Almost half (49%) of the respondents assessed this grade as high or very high. Around 37% rated it as medium and 13% as low or very low.

What is more, the respondents were asked about the reason for their potential dissatisfaction with work. More than one answer could be chosen. The most frequent cause of dissatisfaction among respondents turned out to be unsatisfactory remuneration (46%). Other factors mentioned by respondents were: unsatisfactory incentive system (26%), unsatisfactory career opportunities (25%) and too high level of stress at work (24%) as well as unsatisfactory professional development (23%). About 17% of the respondents ponted out to the lack of balance between work and private life. Other factors mentioned factors were: too much overtime, insufficient personnel, work overload or "nothing".

The statistically significant relations between several analyzed variables were found (correlation using the Kendall tau b test (τ)). This coefficient takes values in the range <-1, 1>. The value of 1 shows full compliance, while the value of 0 means that the arrangements of two variables are not consistent. The value -1 indicates the total opposition of the arrangements of variables. Therefore, it determines not only the strength but also the direction of dependencies between variables. The significance level of $p = 0.05$ was assumed in the research.

It has been shown that the lower the employee satisfaction rate is, the more frequently the employee is willing to change his/her job ($\tau = -0.47$). Also, the smaller the sense of stability of the employee's employment is, the more frequently the employee is willing to change his/her job ($\tau = -0,22$). The greater the sense of stability of employment is, the higher the degree of job satisfaction is ($\tau = 0.32$). In addition, the greater the employee's permanent availability to the employer is, the greater the degree of stress burden is ($\tau = 0.18$).

Nationwide research indicate that work-life balance is disturbed in case of almost a quarter of Polish employees. In studies on the quality of life in Poland inthe year 2015, the results indicated that 19% of respondents admitted that they have no free time during the day for themselves, among which less than 4% of people considered that they lack time even for the necessary activities. About 25% of people estimated that they had enough time for everything

without unnecessary haste, while 6% of respondents indicated that they had even too much time available for their activities. Almost half of the Poles stated that they had enough time to do their necessary activities, and in addition, there was some free time left for themselves. Lack of free time was reported in research mainly among people aged 25-34 (28% of them) as well as 35-44 years (31%). (Jakosc zycia w Polsce w 2015 r., 2017)

New technologies enable constant contact with employees, even after working time. Cases of business contact in free time in the previous two months were confirmed by almost 30% of working Poles. For around 20%, these contacts took place one or two times during that period of time, while for almost 10% they happened more than twice. In the case of two-thirds of respondents, the business case connected with the contact concerned the immediate handling of the assigned task. Such contacts are more often related to urban inhabitants (33% of respondents) than rural residents (24%) and men (33%) than women (25%) (*Badanie organizacji i rozkładu czasu pracy w Polsce w 2015 r.*, 2016, p. 26).

The global changes in communication tehnologies affect also the consumption acitvity of people. One of crucial aspects of modern consumption activity connected with the use global network of Internet is the frequency of purchases online. The respondents were asked how often they make purchases online. Almost 20% of the consumers buy from online stores as often as in stationary stores, while around 60% of respondents buy in online stores from time to time, more rarely than in the stationary stores. Including those consumers who buy in online stores more often than in the stationary ones, around 85% of young female consumers of Czestochowa are e-consumers. (Karczewska & Bsoul-Kopowska, 2017)

Figure 1. Chosen patterns of consumer behaviour. Female inhabitants of Częstochowa aged 20-44. N=390
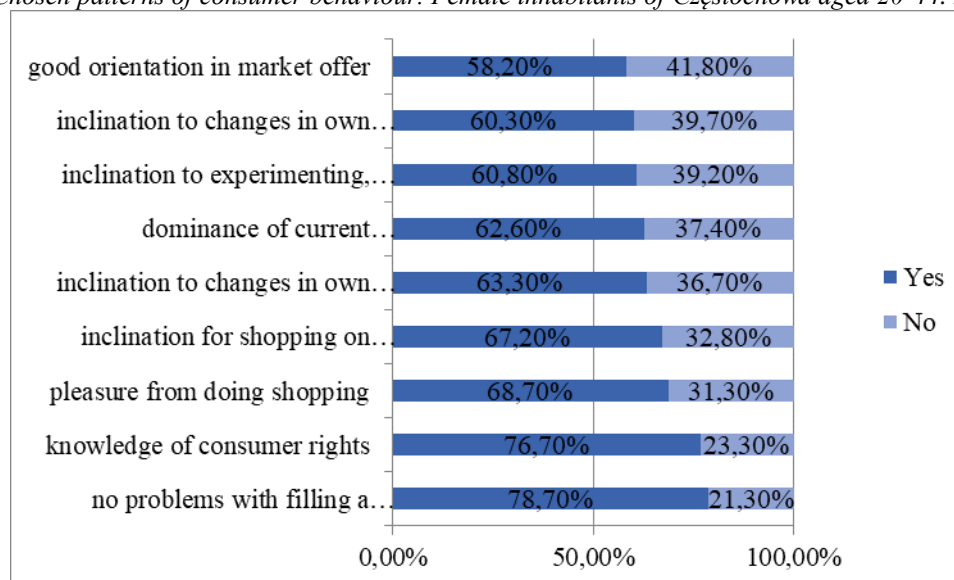
Source: (Own study)

As the firure 1 presents, the researched young female consumers in Częstochowa manifest a lot of global modern consumer behaviour. Thanks to the use of different sources of information (among others Internet sources), they are well oriented on the market (58%), they are inclined to experiments and novelties in various spheres (connected with new goods and services) (60-63%) and their current, short-time oriented consumption dominate over the longer-term one (62%). They also make use of sales and promotions, hunting for bargains (67%) and take pleasure and satisfaction from shopping process (69%). Moreover, they are

conscious consumers – they know their rights (77%) and have no problem with filling a complaint if not satisfied (79%).

More research data shows that the respondents are used to disposability of goods, they do not have problem with exchanging goods for the new one (58%), even in case when they are just out of fashion, yet efficient (52%). About one third of researched consumers is spontaneous in shopping, tend to stroll in shopping malls for pleasure as well as do "window shopping" (watches the shop windows and shop displays no necessarily buying something).

Modern employees as well as consumers in Poland in majority follow main global trends connected with development of new technologies and socio-economical changes and therefore are exposed to potential threats to the work-life balance (work-related stress, time pressure, global competition) or their psycho-social well-being (e.g. striving for satisfaction of constant consumer needs, spiral of debt, excessive consumption etc.) Therefore, if not prevented, these phenomena may have negative consequences to the general quality of life of individuals.

5. Conclusion

There are many positive consequences associated with global economic changes and technological development such as communication opportunities, flexible working time, distance working, continuous learning and immediate access to information, but it can also have destructive impact on the psychophysical well-being of individuals. The information society requires constant learning, development, staying informed and up-to-date all the time, which in the sphere of work can lead to overloading with professional duties, lack of work-life balance and professional burnout. The constant possibility of acquiring and consumption of goods enabled by the online shopping and online banking may also disturb the psycho-social well-being of an individual. The access to the "global brain" of consumers around the world has its benefits of being well-informed, yet may result in overload of data and obstruct the decision making process. The omnipresent marketing inducing constant new needs of a consumer do not contribute to the high level of satisfaction and quality of life of an individual. Increased awareness of the potential threats connected with these global trends can help prevent their occurrence and increase individual's quality of life.

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UNIVERSITY AS PREREQUISITE FOR SUSTAINABLE REGIONAL DEVELOPMENT IN INTERNATIONAL CONTEXT

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Abstract. The objective of this paper is to depict outcomes derived from a discussion "Sustainable Development Based on Innovations and Quality of Education in Global Context" that was conducted in the University of Ruse. The discussion was carried out via "World Cafe" methodology. Stakeholders, divided in teams, enunciate trends and suggestions on four subjects. These subtopics are integrated into a holistic model to enhance Ruse Municipality potential for sustainable development in the global environment with respect to 2030 timeline. Some of the most exciting discussion outcomes to name a few, establishment of future jobs, virtual laboratories and flexible lifelong learning patterns. Approach towards knowledge should be switched from memorising to experiencing. Assertive approach is recognised as crucial along with analytical and soft skills. The main obstacles upon knowledge and skills development are: 1) crises in personal value system; 2) relation between real life and education significantly gaps behind. University is envisioned as a mediator for matching business and education needs. With respect to Ruse international economic development, traditional sectors should be promoted, along with emphasising on global newcomer – IT, tourism and Danube River related businesses. Recommendations for growth are: entrepreneurs should open to global market, particularly to Romania. The main development obstacles are: demographic crisis, underdeveloped infrastructure, inadequate services from local authority and short term planning orientation. As a final point, it is obvious that in this case, university should be not only organizer, but also enabler for sustainable regional development in the global context.

Keywords: International regional development, university, economic development, education, World Cafe

JEL Classification: I25, F63, O35, R11, R58

1. Introduction

The current paper discusses the idea about the combined peoples' efforts, representing separate institutions with different opinions, to promote the extremely important place of the

University of Ruse in Bulgaria, for the development of the Danube Region. The EU strategy for the Danube Region has eleven priority areas for development, four of which are assigned to Bulgaria: a) increasing competitiveness though innovation, education, culture, tourism, multicultural dialogue and preservation of the regional identity and rich cultural heritage; b) improvement of accessibility to and from the Danube River and effective utilization of its resources; c) improvement of water quality, protection of biodiversity, prevention and risk management; d) strengthening of management capacity, coordination and partnership on all levels, improvement of security and integration of people with disadvantages. Ruse Municipality, which is the most developed on the Danube River in Bulgaria, based its program documents on strategy that stresses unquestionably on cooperation between Municipality and University of Ruse for improvement of research and innovation activities. The planning activities include provision of EC financing for the creation of centers for excellence and competitiveness, equipped with modern laboratories. The Municipality aim is to promote knowledge-based economy and innovation, which will need healthy, highly educated, free, mobile and entrepreneurial people. The conduction of constructive dialogue is based on the method called World Café. It is used because of its advantages to stimulate participants to share different opinions and make suggestions. The results lead to ideas about structural transformations or new strategies for development (Dawkins & Solomon, 2017; Horng, et al., 2017). This method is developed in the corporate management, but it is often used for educational purposes, because of its ability to develop a shared education, and for the development of professional, academic and emotional competences (Estacio & Karic, 2015; Lorenzetti et al., 2016; Martinez-Izaguirre & Martinez de la Hidalga, 2013). It is applied in the initial phases of the interdisciplinary research, which facilities the integration of knowledge (Ruppert-Winkel et al., 2014). The method of World Café has been used in the discussion "Sustainable Development, based on Innovation and Quality Education in Global Context", organized by the University of Ruse. It encompasses visions of the organizations at different levels, which form the environment for the development of Ruse region, and accounts for their dynamic behavior for the formation of directions for realization of business strategic decisions (Papazov & Mihaylova, 2015) and internal control (Bilgi et al., 2017), developing new products (Stoycheva & Antonova, 2018), key competence for sustainability (Kostadinova & Antonova, 2018) as well as probation of models of control on lecturing teams at higher school (Lambovska, 2018).

This paper presents the results of a discussion, organized per World Café method about the directions of sustainable development of Ruse Municipality. The participants in the discussion represent the local business and authority, educational organizations and students. Four main topics are explored: 1) Establishment of better connection between business and public sector with education; 2) Development of innovative education for the needs of Ruse Municipality; 3) Necessary skills and competences for professional career in the 21st century; 4) Economic development of Ruse region by 2030 based on innovations.

2. Methods

The World Café has five common components: 1) environment or setting; 2) welcome and introduction, i.e. host; 3) small group rounds; 4) questions; 5) harvest or summary. However, the method is modified to meet the central idea "*sustainable development.*" Thus, it is decomposed to four branches (topics) discussed at four separate tables. The host of each table

presents three keywords or notions on each of the three questions discussed (spurs), attaching them to the board on the four topics. The synthesized model is debated with emphasis on the opportunities for partnership and mutual interest. There are three questions on every topic, as the four target groups of participants – business, local authority, teachers and students are expected to answer. After one team rotation, the same sequence is performed by the next two teams. The host of each table strives to arrange the teams' views. The fourth team summarizes the ideas of the previous three ones. As a result, self-adhesive sheets are prepared for each of the three discussed issues using keywords/phrases. The table host welcomes and introduces participants to the topic. Time is organized as: 1) every stakeholder has 5 minutes for individual brainstorming, the ideas are written on A5 white paper with different colors: business – green; local authority – blue; trainers – red; students – yellow; 2) each member presents his ideas for 5 minutes; 3) table's host presents a brief statement of previous rounds (except first and fourth) for 3 minutes; 4) the ideas are discussed and updated as hints are written within three key phrases/words for each question on the topic that lasts 7 minutes. Finally, the moderator (chief host) graphically reviews results and put a basis for discussion using initially prepared mind map with branches – main topics and questions.

3. Results and Discussion

The topic discussed on table one is: "*How to develop close relationships among business, public authorities and educational entities?*" Motivation for that subject is consequent with the notion of Knowledge Triangle and Innovation postulated by the European Commission. The knowledge triangle is composed of three sides, i.e. education, business and innovation. Establishment of close, effective links between education, business and public sector is envisioned as an enhancer of growth. The three questions related to this topic are as follows: 1) What is your understanding of the knowledge triangle? 2) What are the barriers and challenges for establishment of links between stakeholders? 3) What good practices could you share out of your experience? Regarding the first question, reactions gravitate around partnership between professional and public interests on the matter. An educational cluster could be established as a starting point. As a result, job positions could be accessed easily. With respect to the second question, reactive (instead of proactive) planning is envisioned as a barer for link establishment. However, virtual laboratories of jobs of future is seen as a challenge. About third question, the following practices have been discussed: "Open lessons" in the local parliament, "Open hour" for preliminary school, "Snow White" Project, supported from one of the biggest retailers in the region and Foundation "Ruse – Free Spirit City". Another important issue is how to develop innovative education for the needs of Ruse Municipality. The first question in fact is what "innovative education" means to the participant? How do they understand it? As Carrera and Ramirez-Hernandez (2018) claimed: "*The definition of innovative education is complex because it encompasses these ideas of creation, modification, discovery, intervention, intentionality and systemization, and integrates them with the problems of education: technology, teaching approaches, pedagogical processes, and people.*"

The local authority sees it as education for the future using modern technologies, connected with the newest trends and requirements of labor market and giving solid ground for upgrade capabilities. For the business this is a process that enables possibility for learners "to think and create" in order to achieve competitiveness for organizations they study/work.

Teachers (principals and vice principals) say that this is "creativity", "management of knowledge" and lifelong learning (LLL) but this cannot be achieved without assets (real and financial) – a conclusion made in previous study by Dimitrova and Petrova (2011) as well. Students round out that education must be interesting and build active civil position in society that should include even "family" as a factor. These answers naturally contribute the second question: "What are the key innovations (approaches) in education that should be introduced?" All participants are unanimous that "learning-by-doing" is the most suitable approach but this is linked with the charisma of people involved, i.e. educators, practitioners, policy-makers, etc. As might be expected, some little gaps among the contributors are present in using different words for similar things. For example, the municipality proposes morning-shift learning mode for primary and secondary schools but this means more capacity according to teachers, complication to work in small groups with young people, etc. Every participant requests new courses corresponding to the economic situation in Ruse region. However, partnership and involvement in mutual projects for regional development are vital for schools as they wish to be unique in certain area or "pioneers" in their terms. More interactive methods for education (debates, cases, discussions, self-assignments, e-materials, etc.) and practice are welcomed for teachers and students that are supported by business as well. Additionally, employers are looking for language skills from young people as they declare: *"... **we operate in global market** ... on the border with Romania"*. Moreover, business realizes an opportunity to share experience from own specialists in some specialized classes at schools.

Finally, the most provocative question, which is a sequence from previous ones, is: "If we are looking in one direction how we can support the innovative education?" Local authority has his opinion that analysis of efficiency and quality of education must be done and on that base it can develop policy and plans. The municipality experts can also help in studying and implementing contemporary and effective educational practices, which is highly appreciated by teachers and students. Furthermore, that is supported by employers but with the limitation that this should be done taking into account the specialization of companies in Ruse region. Besides, they advocate compulsory and real internship programs. In return, local business offers sharing the costs for repair and maintenance of buildings and purchasing new equipment for practical studies. The session ends with the phrase: "*More elements of dual education and less paper work.*"

Next topic in hand is: "*What are contemporary skills and competences required for professional career in 21ˢᵗ century?*". Motivation for that question is derived from rapid changes in global environment, which poses challenges upon human resources in the region. Additionally, some authors (Ritzhaupt et al., 2018) argue, a set of knowledge, skills and abilities (KSA) for a particular job position are rich in quantity, i.e. one hundred seventy-six KSA. What is more, Ritzhaupt and Kumar (2015) describe KSA are diverse in quality either, i.e. for a specific technical job they found that solid foundation in the field, learning theory, soft skills, technical skills, and a willingness to learn on the job are vital. Moreover, professional development is related to ethical values of people (Nichev, & Petrova, 2015) and this relation can be transposed into dynamic model (Ghinea et al., 2015). Thus, identifying proper KSA is essential for sustainable development. This topic has been decomposed into tree questions: 1) What are the crucial knowledge, skills and abilities needed in next ten years' timeline? 2) What are the obstacles to create the identified KSA? 3) What kind of support would be in favor of acknowledged KSA building?

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In terms of crucial knowledge, skills and abilities, secondary school authorities envision digital competence, contemporary vocational skills, teamwork skills, creativeness and responsibility for meeting deadlines and performance standards, as important. Business representatives outline digital competence, fluent command in languages, creativeness, analytical skills, soft skills, responsibility, proactive, loyalty, persistence and system thinking as essential. They distinguish memorized knowledge and knowledge "on demand", as well as data proceeding skills and skill for putting structure in the information flow. Latter is predicted as more valuable for the next decade. Local authority strains on skills for effective communication, emotional intelligence, adaptability and youth civic engagement. Students believe that critical thinking (towards themselves including), problem solving and open-mindedness are important: "*We have IT and logic enough. I want to experience knowledge in different areas… I need learning by doing and mutual projects for early career orientation.*"

Concerning the second question, teachers recognize the following barriers: outdated knowledge in the formal educational system; lag of a bond between reality and education; willingness to reject others opinion of young people and to hold own position in aggressive manner. Entrepreneurs define low competence, labor demotivation, dissimilarity in the mindset based on generation difference, insufficient work experience of the graduates, and fast work dynamic as main drawbacks. From the perspective of municipality administration representatives, the main problems are i.e. negative demographic trends, regionally disproportional investments / business development, and personal traits like reluctance, general unwillingness and lack of commitment. One stated: "*20% of voters determine the elections result; youth is not in attendance in these 20%.*" From students' point of view, main obstacles upon contemporary KSA are rigid educational system, mismatching students' needs and expectations, and lack of early career orientation.

Regarding the third question, a strong emphasis is put on establishment of link among education, business and local authority. The representatives of these stakeholders boldly agreed that such a connection is vitally important. University is envisioned as a key player to leverage that link. Thus, activities like "business open days", mutual projects, apprenticeship, updating and adjustment of educational programs to the labor market, establishing educational clusters are feasible starting points. A notion of different attitude toward young people occurred here, i.e. step by step communication, addressing details they are interested in, using mentors for KSA tuning on the job, more learning by doing and practical experience.

The fourth table places the topic: "*What shall be economic development based on innovations of Ruse Municipality in 2030?*". The milestones to participants are: 1) What sectors can have key role for innovations based economic development of Ruse Municipality? 2) What innovations in these sectors shall be implemented, adopted for further sectors' development? 3) What are the key barriers and challenges for implementation of innovations?

Stakeholders divide their answers on first question into two parts – definition of traditional industries that are supported from local government and new, with potential for development and influence on local development. Educators envisage as key regional industries transport, manufacturing, sewing industry and furniture production. The most underdeveloped sector is tourism that should be diversified and existing advantages of Ruse region must be exploited better. Other sectors with potential are IT and infrastructure construction. Educators stress on the opinion that education is precondition and important factor for sustainable local economic development and that policymakers must pay special attention on it. Business supported this

opinion and added trade as sector of regional importance that has to be developed as global and opened to Romania. According to the business, machine building, machine tools and logistics are other key sectors that must be supported by better services from public administration. Local authority agrees on the importance of education, traditional manufacturing, IT sector and ships building, and repair based on better cross-border cooperation and infrastructure improvement. Young people of the municipality confirm the need of education strengthening and propose slight different vision, based on openness of the industries toward the Danube River (fishery, tourism, transport, and export) and improvement of healthcare services. Innovations are main precondition and engine or further economic development. For representatives of education as introduction of new equipment, technologies and methods in education including dual education and Romanian language in schools are crucial provision of qualified people for local labor market. Business representatives point out the need of automation, liberalization, staff qualification, marketing skills and introduction of ISO standards, while local authority raises the issues as long-term analysis of dynamic in sectors, facilitation for young entrepreneurs, attraction of foreign investors and cooperation platforms for provision of better administrative services. Undergraduates outline the need of innovations in education, healthcare and administrative services. An interesting point of view is "returning the happiness in education" for young people that can be a key for successful lifelong learning and improvement of qualification. All groups agreed that priority of the municipality is education that must correspond with proposed innovations. The flexibility of the environment can create some obstacles and the third question helps for identification of key barriers and challenges for implementation of innovations. Educators foreseen main challenge in the demographic collapse of Ruse region, which can slow down the economy. Another difficulty can arise because the changes in educational system require a long period, the funding for adoption of innovations is insufficient and the low share of teachers working with computer and being aware of IT – a risk mentioned by Alexandrova (2015) as well. Along with demographic crisis, business defines as main problem lack and/or low qualification of workforce. According to them the other risks upon entrepreneurs are: lack of information about global and regional markets and customers' needs, lack of risks evaluation and prevailing of short term planning instead of long-range planning, bureaucracy and inertia of the business. Local authority shares the opinion of huge demographic crisis that leads to the necessity of higher salaries, clean workplaces, businesses that protect the environment and better conditions for investment in the municipality. The main risk expected by administration is non-acceptance of Bulgaria in Schengen area that causes many difficulties. Students' evaluation of risks starts also with huge "brain drain", the necessity to keep young people in the region and inadequate investments in education as well as inoperative nearby airport and second Danube bridge Ruse-Guirgiu that can allow sustainable development in global context.

4. Conclusions

In conclusion, it is agreed that there is a need to establish bonds among business, public authorities and educational entities. Stakeholders are in favor of assigning an external coordinator (recruiter) to establish and maintain the links. It may be considered that participants, on the second topic, are unified that: 1) innovative education is management of knowledge, creative and lifelong learning process, 2) learning-by-doing and language excellence of learners are vital, 3) dual education should be priority for mutual understanding

in Ruse Municipality. The general statement from this discussion is that University can facilitate the mutual understanding among local authority, business, educators and learners and be key enabler for sustainable regional development. In summary of the third topic outputs, attitude towards knowledge should switch from formal knowledge memorizing to experience knowledge (tacit knowledge). In terms of KSA, educational system stress more on knowledge, less on skills and almost none on attitudes. All the participants agree that attitudes and value system is a critical area for development. As a strategic point, university should establish and leverage a link between key players in the region to adjust and support education to equip students with proper KSA. The conclusions, which can be done after fourth topic are: 1) Ruse Municipality has potential for development and it can be based on traditional industries, education and development of new sectors, based on informational technologies, reflecting proximity to Romania, globalization of trade and localization on the Danube River; 2) main innovations should start by involving business with the education, retaining young people through social and demographic policy, attraction of new investors in the municipality, who will be able to follow the philosophy of corporate social responsibility and environmental protection; 3) the main barriers and challenges for innovations implementation are demographic collapse, low qualification of workforce and lack of long range planning among local companies. All stakeholders agree that University of Ruse can be the driving force for provision of well-qualified graduates, innovations, technology transfer, knowledge and expertise, and can be a mediator within planning, implementation and evaluation of policy for local economic development of Ruse district and the Danube Region.

Acknowledgment

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CITIZEN REPORTING SYSTEMS IN THE GLOBAL AND CZECH SPECIFIC VIEW

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Abstract. Urban areas have to face many problems rising from the concentration of people on limited space. Solving these problems is a matter for the public administration, especially those serious issues as unemployment, security, scarcity of housing, air pollution, etc. However, digital technologies enabled citizens to participate on solving some issues visible to them. Citizen reporting systems offer citizens fast and very simple way to draw attention to a problem in a particular territory (damaged benches, mess, broken pavement, uncut grass, landfills, etc.). We can distinguish mainly three types of citizen reporting systems: web based; module, which is part of city mobile application; and specialized mobile application for issue reporting. Such systems use citizens as sensing devices gathering data that help cities make their operations more flexible. This way of participation activates people to care about place they live - their city. Smart cities need active people who care and feel responsible for the city that is why the participation is one of main pillars of smart cities. Through the literature review, this article summarizes the use of citizen reporting systems in the global context and compares it with the situation in the Czech Republic. Analysis of city applications of regional capitals reveals if they use some citizen reporting system and if yes, which types do cities use.

Keywords: participation, technology, cities, citizen reporting systems, citizens

JEL Classification: H70, O33, F60

1. Introduction

Citizen reporting is part of citizen sourcing techniques, together with consultation, ideation, and co-delivery. (Linders, 2012) Citizen sourcing uses the same techniques as crowdsourcing though the purpose is specific. Citizens form the crowd that acts in the public interest. Citizen sourcing can have the same forms as crowdsourcing – some of them more passive (citizen as sensor) and some of them more active (citizens bring ideas, actively report or coproduce services). Especially this form of citizen sourcing based on active participation is in the forefront of expert interest. The importance of citizen participation and engagement emphasizes many authors (eg. Ho & Coates, 2004; Nabatchi et al., 2017; Neshkova & Guo, 2012; Machova et al, 2018; Swindell & Kelly, 2000; Wu & Jung, 2016) and organizations. For example, OECD (2001) reported "engaging citizens in active participation in policy-making is the most advanced way of strengthening government-citizen relations. It means that government acknowledges and supports citizens' own, autonomous role in the relationship". (OECD, 2001) Kopackova (2018) have studied citizen participation in the context of citizens' needs and formulated higher citizens' needs. Local governments can support satisfaction of

citizens' higher needs "by giving them the possibility to be heard, participate in the public matters, express an opinion on the state of affairs, etc.". (Kopackova, 2018) Michels and De Graaf (2010) have studied impact of citizen participation on local policy making. Although their findings show that the role of citizens is limited, "citizen involvement in policy making makes people feel more responsible for public matters and increases public engagement. A second positive effect of participatory policy making is that it encourages people to listen to a diversity of opinions and thus promotes mutual understanding, which, however, does not automatically imply that they are also willing to shift preferences. Thirdly, it contributes to a greater legitimacy of decisions". (Michels & De Graaf, 2010)

Citizen reporting is a very broad concept covering all activities of citizens in which they actively report some incident or problem they witnessed. We can distinguish citizen reporting based on two parameters; (1) the level of urgency, and (2) the motivation of reporters.

Incidents that are life threatening or such incidents with a danger of delay use different reporting systems than non-emergency incidents. In the research literature, there is no precise differentiation between emergency and non-emergency incidents, which is why we use official recommendations for citizens as a source. For example, Northern Illinois University Department of Police and Public Safety explain, "an emergency is a serious, unexpected, and often dangerous situation requiring immediate action and that may result in personal injury or damage to property" (NIU, 2018). Another example is from Racine county Wisconsin "when immediate action is required: someone's health, safety or property is in jeopardy or a crime is in progress". (Racine county Wisconsin, 2018) We could continue with the list of recommendations; nevertheless, common signs of emergency incident are obvious. Emergencies need fast response therefore reporters should use national emergency hotline if there is only one or national emergency phone numbers for ambulance, fire, and police. In the USA there is one hotline 911. European Union introduced 112 hotline; however, member states still have their national hotlines or dedicated phone numbers eg. 999 in the UK (Victor et al, 1999); 110 in Germany; 150, 155, 158 in the Czech Republic (Travel.State.Gov, 2018).

Non-emergency incidents can also be reported by phone. Some American cities have implemented 311 hotline (Offenhuber, 2014) as the counterpart for 911, while in the UK there is 111 and 101 for non-emergencies (Turner et al, 2013). Nevertheless, cities mostly use their own numbers for reporting non-emergencies. The development of information technologies brought also other options for the reporting of non-emergencies. Electronic forms represent the easiest way to report. With the enhancement of geolocation (mesh up of online maps or specialized GeoWeb), the incident can be located more precisely. New form of reporting brought mobile phones and applications specialized on reporting of non-emergencies. None of these forms is suited for emergency incidents but their role in reporting non-emergencies is indisputable.

Different motives also determine the way of reporting. First motive why people report about some incident is that they want to share some experience with others. They do not seek for the solution of problem they are just interested and think that other people will be too. In this situation, people usually use social networks (Twitter, Instagram, Facebook, etc.). Entirely different reason for reporting have people involved in the incident in any way who want to solve it. If there is simple way how to contact responsible authority with high probability of success, especially some application, which meets the quality requirements (Simonova & Foltanova, 2017), then people use this official way. However, not all authorities

react as expected. In this case, people use publicity as the form of pressure or escalation. They mostly report the problem through specialized web or mobile application or they form discussion groups but at the same time push responsible authorities to do their job. Fedor Gorozhanko, the developer of web application Zalivet.spb explained it clearly: "Since 2012 I've been adding everything to the map: to visualize the problem, for mass-media and also for a kind of psychological pressure. Because when an official sees that he has a problem in his district, he knows that his superior can also see it, and so he tries to repair it as soon as possible" (Ermoshina, 2014). To summarize the motives of reporting, people report the problem publically for amusement or as the form of psychological pressure on responsible authority. In other case, they use direct channel to inform responsible authority.

This chapter revealed that citizen reporting systems differ according to the urgency of the incident and motivation of reporter. Although we know this field is rapidly developing, we try to summarize currently available types of citizen reporting systems:

- Hotlines 24/7 - mostly used for emergency incidents.
- Phone number within work hours – non-emergency incidents, direct communication.
- E-mail - non-emergency incidents, direct communication.
- Electronic form (with or without geolocation) - non-emergency incidents, direct communication.
- Municipal GeoWeb showing the state of solution of reported incidents in the city with possibility to add new - non-emergency incidents, direct communication, publicity, an overview of problem status.
- Municipal mobile application with the module for reporting - non-emergency incidents, direct communication, usually publish state of the solution.
- GeoWeb or mobile application operated by third party, related to a wider area than the city, specialized on reporting - non-emergency incidents, escalation, publicity, usually publish state of the solution.
- Universal mobile application for cities, covering different topics with the option of reporting - non-emergency incidents, direct communication.
- Social networks - non-emergency incidents, publicity, amusement.

Phone calls and e-mails contain only limited amount of structured information therefore human factor is necessary to decode the report. Whereas all other forms of citizen reporting systems contain semi-structured information that can be used for automated processing.

2. Methods

This paper evaluates the accessibility of citizen reporting systems in 13 Czech regional capitals. The process of evaluation covered finding of city web pages and searching for the information how to report non-emergency incident. As the range of non-emergencies is too width, we had to narrow the scope. Evaluators acted as ordinary citizens who want to report incidents considering municipal property: damaged benches, mess, broken pavement, uncut grass, landfills, potholes, broken lights, or abandoned vehicle. Each city was evaluated individually to see what types of citizen reporting systems they have. The evaluation was held in July 2018. Mobile applications used in selected cities are described in more detail.

3. Results

The case study revealed that citizens in all regional capitals have some possibility how to report non-emergency incidents apart from the phone call. Figure 1 shows that the most frequent citizen reporting system is electronic form especially the mesh up of form and digital map. It is very convenient way how to report incident from table computer. However, the growth of smart phones popularity caused that at the second place are mobile applications. People can take a picture and easily send the report from the place of the incident. Seven cities out of thirteen support some form of mobile reporting. Only citizens in Ústí nad Labem have fewer options for reporting. They can only use e-mail or phone call. Moreover, it is not clear what types of incidents can be reported.

Figure 1: Frequency of use of citizen reporting systems in selected cities
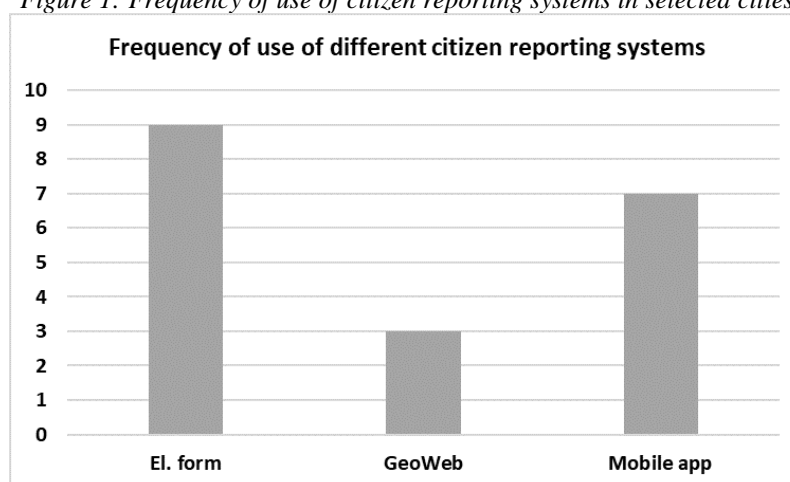
Source: (own processing)

In table 1 are depicted particular citizen reporting systems for each city with the source of information. As the mobile applications are now very popular, we will focus our attention on this type and describe them in more detail. Three cities use the application InCity developed by Intelis. This universal mobile application provides the environment for sharing of municipal information. Cities, which are involved, can publish information from local government, useful information about accommodation, cultural events, restaurants, or traffic. Moreover, cities can choose the possibility of active citizen reporting. Hradec Králové, Karlovy Vary, and Zlín have chosen this option, whereas Liberec, Olomouc, Pardubice, and Ústí nad Labem only use InCity application to publish information but not for reporting. Other cities do not use InCity at all. Citizens using this application can send new report or see their own reports. However, InCity web pages do not publish sent reports and their status to inform citizens what incidents have already been reported and solved.

Second mobile application is DejTip, which is mobile application operated by third party, related to a wider area than the city, and specialized on reporting. Pardubice, České Budějovice, and some Prague districts use this mobile application, which allow users to take a picture, select one of the categories and add a comment. The server then locates a tip to the appropriate municipality based on the position of the GPS phone, completes the report of the nearest address, and passes it to the appropriate municipality. The municipality participating in the program receives an email twice per a day or it can have admin interface for sorting messages. DejTip web pages shows the map with the content of reports and their status.

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Table 1: Citizen reporting systems used in evaluated cities

City	Incident	Citizen reporting system	Sources
Brno	All non-emergencies	GeoWeb	https://lesweb.brno.cz/hlaseni-zavad
České Budějovice	All non-emergencies	Dej Tip – mobile app	https://www.tkpgeo.cz/dejtip/cb/
		El. form	http://www.c-budejovice.cz/hlaseni-zavad
Hradec Králové	Street lights	El. form	https://www.tshk.cz/cs/sluzby/formulare/hlaseni-zavady-verejneho-osvetleni
	All non-emergencies	Mobile app	InCity
Jihlava	All non-emergencies	El. form	http://zavady.jihlava.cz/obcan.php
Karlovy Vary	Street lights	El. form	https://kv.verejneosvetleni.cz/
	Other non-emergencies	El. form	https://mmkv.cz/cs/zavady-nedostatky
	All non-emergencies	Mobile app	InCity
Liberec	All non-emergencies	GeoWeb	http://marushkapub.liberec.cz/default.aspx?themeid=8
Olomouc	All non-emergencies	El. form	https://www.tsmo.cz/hlaseni-zavad/
Ostrava	All non-emergencies	El. form	https://cistaova.ostrava.cz/
Pardubice	All non-emergencies	Dej Tip – mobile app	https://www.pardubice.eu/dejtip/dej-tip/
		Dej Tip – el. form	http://dejtip.eu/form/(S(ofllaqq1sopeo0bezchj1v2p))/default.aspx?localityCode=jhpa32
Plzeň	All non-emergencies	GeoWeb and mobile app	http://www.plznito.cz/map
Praha	All non-emergencies	Mobile app	https://www.mojepraha.eu
	All non-emergencies	El. form	https://www.tsk-praha.cz/wps/portal/root/hlaseni-poruch-a-zavad
Ústí nad Labem	Not obvious	E-mail	http://www.msul.cz/rub-cerne-na-bilem
Zlín	Street lights, traffic lights, waste containers	El. form	http://www.tszlin.cz/
	All non-emergencies	Mobile app	InCity

Source: (own processing)

Prague and Plzeň have their own municipal mobile application. Plzeň has GeoWeb Plznito and mobile application Plzeň občan, which is municipal application with a lot of information from local government and the reporting module. Both ways, mobile app and GeoWeb can be used to see the status of reported incidents or to report new one. Prague also has its own mobile application Moje Praha. The goal of the application is to make it easier for all citizens

to find their way around the city and to report all non-emergency incidents. Mobile application does not provide status information about reported incidents.

4. Discussion and conclusion

Presented case study revealed that even if all cities offer the option to report non-emergencies by phone or e-mail, most of them also use some tool to get information in more structured form. The most frequent form of citizen reporting system among regional capitals is electronic form with geolocation followed by mobile applications. Moreover, many cities offer more than one channel for reporting non-emergencies.

Mobile applications operated by third party are very popular whether they are specialized on reporting or not. Universal mobile application InCity proved to be very popular for reporting non-emergencies even if this is only one feature of this application. On the other side, application DejTip, which is specialized on reporting is also popular. Not all evaluated cities have decided to use application operated by third party. Some cities use their own solution for reporting, especially if this is integrated in municipal application.

The length of the paper did not allow for detailed study of social networks, although some authors suggest that this source has very high potential value for reporting of incidents (Hughes & Palen, 2009; Toriumi et al, 2013; Gao et al, 2014; Crooks et al, 2013; Nik-Bakht & El-Diraby, 2016).

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FOREIGN TRADE IN GLOBALIZED WORLD: COMPARATIVE ANALYSIS IN SELECTED COUNTRIES FROM CENTRAL EUROPE

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Abstract. Foreign trade plays an important role in the economy of every country, especially in modern globalized world; it solves the proportionality problem, builds the demonstrative effect, but most of all, it supports economic development (in theoretical point of view, foreign trade is part of the formula of Gross Domestic Product). This article deals with selected aspects of foreign trade in countries from central Europe, namely in the Czech Republic, Slovakia, Poland, Hungary, Germany, and Austria. Method of comparative analysis were used in this article, where special attention was placed on two different topics. Firstly, the verification of hypothesis about openness of the economy, where theory claims that strong and large countries are usually less open, compared to weak and small countries. According to this proclamation Germany, Austria, and Poland should be less open than the other analysed countries. Secondly, the development of foreign trade in the countries with and without Euro. Germany, Austria, and Slovakia use Euro as a domestic currency, where other analysed countries have their own currencies. The article compares the development in these countries with the aim to find similarities and differences. Detail results are described in the article, where some conclusions are relatively surprising (for example the development of the trade in countries with and without Euro).

Keywords: Central Europe, Export, Foreign Trade, Globalization, Import

JEL Classification: F43, F49, O11

1. Introduction

Foreign trade is very important for every state all around the world because it is, among others, part of macroeconomic Gross Domestic Product (GDP) formula. In other words, it can either improve the GDP level (in case that export is higher than import) or worsen it (in the opposite case). This basic theory has been explained in many books and articles, for example in Andrews et al. (2011), or Samuelson & Nordhaus (2010).

Nevertheless, foreign trade is important for every country because of other reasons as well. In almost all countries worldwide, foreign trade helps solving the proportionality problem, where only few countries have all necessary resources in quantities required for economic development. Foreign trade also has demonstrative effect and other benefits too, such as

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support of peaceful cooperation among partners, reducing of the risk of conflict, growth of education, and others.

From above mentioned text is clear that foreign trade is very important for every country. The importance of foreign trade has been evaluated in other articles by other authors, for example Baier et al. (2014), Cieslik et al. (2016), Do et al. (2016), Fracasso & Marzetti (2015), Giordano & Zollino (2016), Gladkov (2016), Paskrtova (2016), or Vannoorenberghe (2014). Authors themselves already analysed the topic of foreign trade several times, for example in Kovarnik & Hamplova (2016), or Kovarik & Hamplova (2017).

The Czech Republic is a member state of Visegrad Four, and all other member states (namely Poland, Slovakia, and Hungary) are very important business partners for the Czech Republic. Situation in Visegrad Four countries has been also analysed by other authors, for example by Sacio-Szymanska et al. (2016). However, there are other important economies in the central Europe, namely Germany and Austria, where these two countries are not only strong and powerful economies, but also important business partners for whole V4.

The aim of this article is to analyse the selected aspects of foreign trade in above mentioned countries, namely in the Czech Republic, Poland, Hungary, Slovakia, Austria, and Germany. Firstly, this article analyses the development of GDP in selected countries, because of the importance of foreign trade for this indicator. Secondly, the article analyses the openness of selected countries with the aim to verify the hypothesis that strong and large countries are usually less open, compared to weak and small countries. According to this proclamation should be Germany, Austria, and Poland less open than the other analysed countries. Last analysed topic is about the development of foreign trade in the countries with and without Euro. Germany, Austria, and Slovakia have been using Euro as domestic currency, where other analysed countries have their own currencies.

2. Methodology and Data

Covered period of time is 2000 – 2017, where data were obtained in general available database Eurostat and calculated by authors (Eurostat a, 2018; Eurostat b, 2018).

Methods of comparison and comparative analysis have been used. Moreover, several different calculations can be used for the verification of above mentioned hypothesis about openness of economy. One of the most frequently used calculations measures the relation between export and GDP, where more open economies usually have high ratio. Another possible calculation uses import or turnover of foreign trade (summary of both export and import) on GDP, but because of the limited space of this article has been used the export on GDP ratio.

It is also important to add that the calculations are made per capita. It is quite obvious that the position of Germany is completely different from the other countries in absolute amounts, because it is not only powerful economy, but it has also the highest number of inhabitants (Germany has more than 82.5 billion in 2017, where Poland has almost 38 billion, the Czech Republic around 10.5 billion, Hungary almost 10 billion, Austria almost 9 billion, and Slovakia around 5.5 billion). Therefore, it is almost impossible to compare absolute amounts and all calculations have been made per capita, where such recalculation allows to compare even such different economies.

3. Results

3.1 GDP Development Analysis

As was already mentioned, Germany has currently more than 83 billion of inhabitants, where Poland has almost 38 billion, the Czech Republic around 10.5 billion, Hungary almost 10 billion, Austria almost 9 billion, and Slovakia around 5.5 billion. Therefore, it is quite obvious that the level of GDP in billions of euro is the highest in Germany, and second highest in Poland, where these two countries have significantly more number of inhabitants than the others. However, on the third position is Austria next is the Czech Republic, after that Hungary, and Slovakia is on the last position. As was already explained, it is better to use the level of GDP per capita for comparison. According to this, the highest level is in Austria, Germany is on the second position, the Czech Republic is on the third place, Slovakia is the fourth, Hungary on the fifth place, and Poland is the last. With respect to this information is good to add one interesting fact. Even if the development in the number of inhabitants in each country has not been steady, this number grew in Austria, in Germany, in the Czech Republic and in Slovakia (comparison of the number of inhabitants in the years 2000 and 2017), while it dropped in Hungary and Poland. Deep analysis of GDP development shows that in all analysed countries was significant decrease in this indicator in the year 2009 (both in absolute value and in per capita) as a result of global economic crisis. However, the after crisis development is different. All countries were growing since 2009, but only Austria, Germany, and Slovakia managed to exceed pre-crisis year 2008 already in 2010, where other countries achieved higher value later (2011 in case of the Czech Republic and Poland, and 2015 in Hungary). Moreover, the after-crisis development is different. Austria, Germany, and Slovakia have been growing since 2009 for the whole analysed period, where the Czech Republic was decreasing between 2012 and 2014, and it has been growing again since 2015. Hungary has been increasing since the 2009 with the only exception in 2012, and Poland has been also increasing for the whole after-crisis period with the only exception in 2016. It is quite interesting that Slovakia as the only V4 member has similar development in terms of GDP per capita as advanced economies Germany and Austria. On the other hand, its level of GDP per capita is significantly weaker. However, its position is getting better, where Slovakia was on the last position in 2000, it is already better than Hungary and Poland, and it is getting closer to the Czech Republic.

Following Table 1 describes the values of GDP per capita after crisis, where Table 2 describes the year-to-year growth rates in all analysed countries.

Table 1: GDP per Capita in Analysed Countries after Global Economic Crisis

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Czech Rep.	15596	14261	14980	15643	15367	15000	14902	15987	16711	18116
Germany	31158	30003	31540	33695	34338	35098	36383	37549	38451	39715
Hungary	10763	9397	9868	10146	10018	10282	10688	11235	11569	12605
Austria	35359	34558	35430	37030	37898	38324	39148	40128	40607	42140
Poland	9607	8315	9515	9990	10230	10371	10811	11316	11219	12261
Slovakia	12277	11895	12537	13097	13453	13708	14049	14553	14956	15636

Source: (own calculations based on Eurostat A, 2017; Eurostat B, 2017)

Table 2: Year-to-Year GDP per Capita Growth Rate in Analysed Countries

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Czech Rep.	-8,56%	5,04%	4,43%	-1,76%	-2,39%	-0,65%	7,28%	4,53%	8,40%
Germany	-3,71%	5,13%	6,83%	1,91%	2,22%	3,66%	3,20%	2,40%	3,29%
Hungary	-12,69%	5,02%	2,81%	-1,26%	2,64%	3,95%	5,11%	2,98%	8,95%
Austria	-2,26%	2,52%	4,52%	2,35%	1,12%	2,15%	2,50%	1,19%	3,78%
Poland	-13,45%	14,44%	4,99%	2,40%	1,38%	4,24%	4,67%	-0,86%	9,30%
Slovakia	-3,11%	5,39%	4,47%	2,71%	1,89%	2,49%	3,59%	2,77%	4,55%

Source: (own calculations based on Eurostat A, 2017; Eurostat B, 2017)

Relatively high values of growth rates in Poland and Hungary are probably consequence of relatively low values of GDP per capita, where even relatively small increase leads into high growth rate. On the other hand, it is quite obvious that Slovakia has been growing since 2010, but this growth rate is relatively low, where the Czech Republic was decreasing till 2014, but the growth rate since 2015 is relatively high.

3.2 The Analysis of the Openness of the Economy

As was already described, the openness of the economy can be evaluated by several methods, for example by import on GDP ratio, or by turnover on GDP ratio. However, the authors of this article decided to use export on GDP ratio.

Following Figure 1 describes the export on GDP ratio in percent in all analysed countries.

Figure 1: Export on GDP Ratio
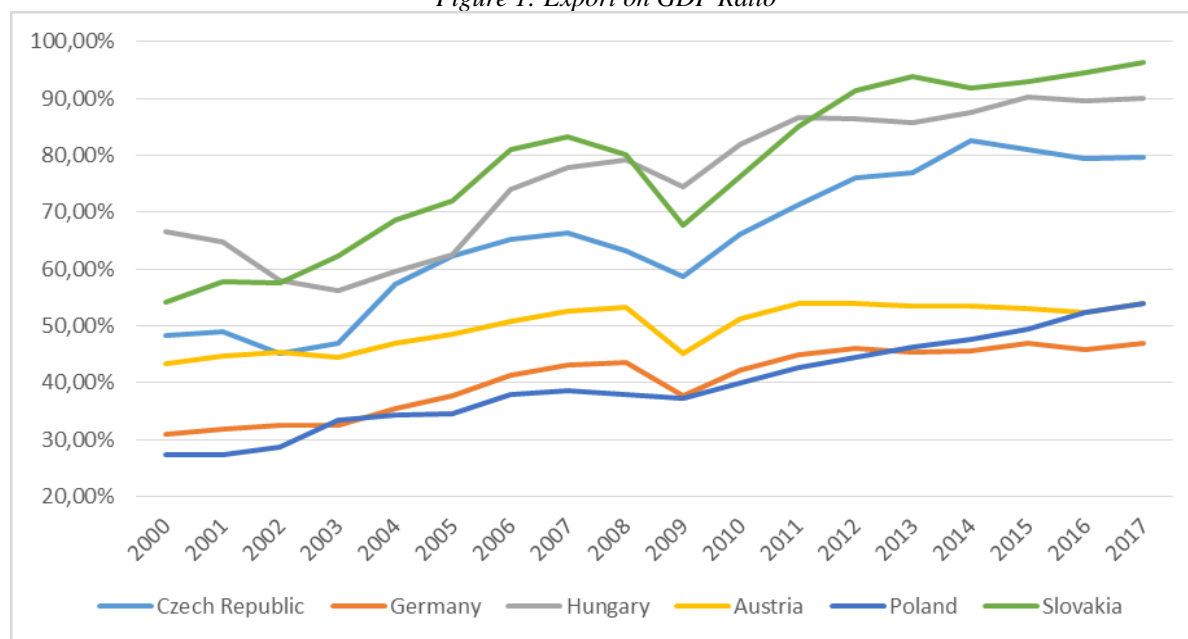
Source: (own calculations based on Eurostat A, 2017; Eurostat B, 2017)

As was described in introduction, theory claims that strong, large and powerful economies are usually less open compared to weak, small countries. Based on this fact can be assumed that Germany, Austria, and Poland should be less open than the Czech Republic, Hungary, and Slovakia. Germany is both huge and powerful economy; Austria is relatively small, but economically strong and powerful economy, where Poland is economically relatively weak,

but large country with a lot of inhabitants. The Czech Republic, Hungary, and Slovakia are relatively small and weak countries.

Figure 2 proves this theoretical assumption. Even if the differences among countries in 2000 were not so significant, in 2017 is quite obvious that there exist two different groups of countries. The Czech Republic has this share almost 80% (it was more than 80% in 2014 and 2015), it is more than 90% in Hungary, and it is even more than 96% in Slovakia. On the other hand, this share is only a little bit than 47% in Germany, almost 54% in Austria, and a little bit than 54% in Poland.

In spite of the irregular development, a following partial conclusion can be made. The theory about the connection between the size of the country and its economic level, and the openness of such country has been proven. Small and weak analysed countries are more dependent on foreign trade, where large or economically strong economies are less dependent. Germany is both large and economically powerful economy, but Austria is relatively small, and Poland is relatively economically weak, but even so are these two countries relatively closed. It can be explained in that way that Poland, even if it is economically weak, is able to obtain a lot of necessary products in homeland, because it has a lot of inhabitants and a lot of natural resources. On the other hand, Austria is relatively small country, it probably needs a lot of product from foreign countries, but it is economically powerful, and therefore it is not so dependent on foreign trade, because GDP is generated from other (domestic) subjects.

3.3 The Analysis of the Foreign Trade Development

Last analysed topic in this article is about the development of foreign trade in countries with Euro and without Euro. As was already mentioned, Germany, Austria and Slovakia have been using Euro as domestic currency, where the Czech Republic has Czech crown, Poland has zloty, and Hungary has forint. Moreover, Germany and Austria were the original members of Eurozone, where Slovakia entered this organization in 2009. This chapter analysed the development of foreign trade with the aim to compare the development in the countries with the Euro and without Euro.

The balance of foreign trade with goods and services in billions of euro again proofs the strong economic position of Germany and Austria compared to other evaluated countries. In 2000, only Germany and Austria had positive balance, where all V4 members had negative trade balance. In 2017, the balance of Germany is almost 250,000 billion euro, where second Poland has positive trade balance almost 20,000 billion euro. It is obvious that the Germany is far more powerful than other countries. Interesting fact is that Austria is on fourth position, where not only Poland, but also the Czech Republic has higher trade balance. That means that the growth rate of foreign trade balance in V4 countries has been higher than in case of Austria. However, because of the strong position of Germany, trade balance is again calculated per capita in following Figure 2. The net balance shows a little bit different results after this re-calculation. The highest net balance per capita is still in in Germany, but on the second position is already the Czech Republic, Austria is the third, and Poland is on the last position.

Figure 2: Net Balance in Terms of Goods and Services per Capita
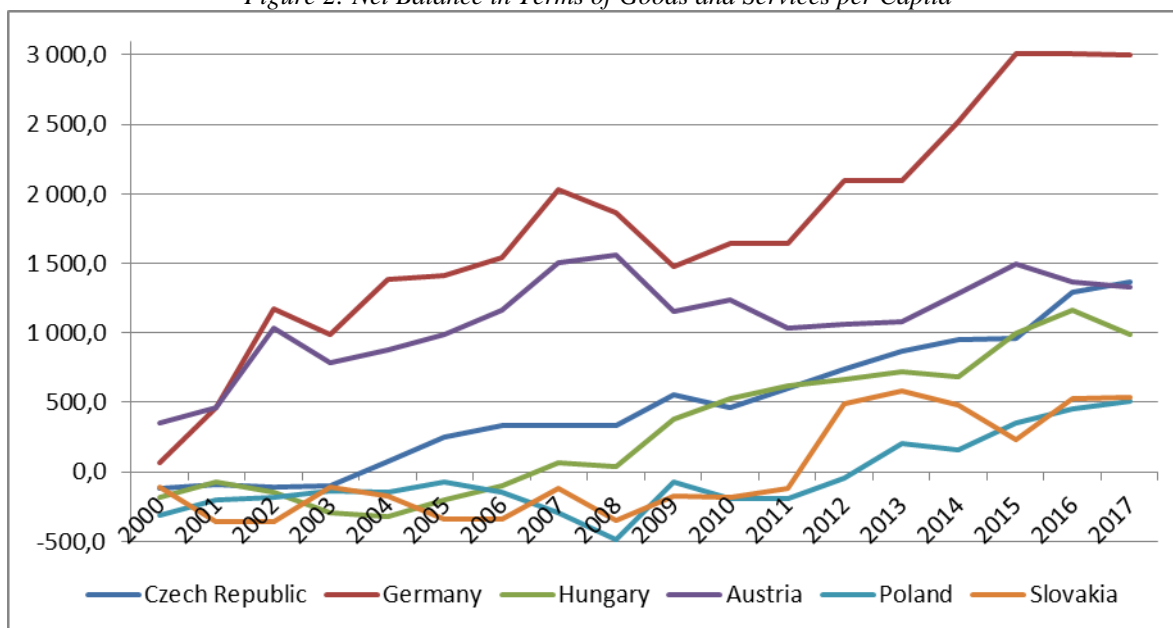
Source: (own calculations based on Eurostat A, 2017; Eurostat B, 2017)

It is quite obvious that the fact of same or different currency has no direct impact on the development of net balance. Germany has been growing significantly, but this growth rate is probably the consequence of strong economic position of this Country. Foreign trade is not so important in this county, Germany can be considered as relatively closed economy, but it still can generate a lot from foreign trade. On the other hand, it can generate a lot from the trade with goods; relatively surprising fact is that in trade with services only is Germany in negative balance.

Austria had the highest trade balance per capita in 2000, but the growth rate has not been as rapid as in Germany, and it is on the third position in 2017. On the other hand, the Czech Republic was on the fourth position in 2000, the growth rate was relatively high, and it is on the second position in 2017, even if this country has own currency. The trade in Slovakia has not been steady, but it is not possible to see any significant increase after the entrance to the Eurozone. Significant growth occurred in 2012, but it has been followed by another unstable development.

Relatively interesting fact is that in 2009, in the year of economic crisis, the net balance per capita decreased in Germany and Austria, while it increased in all V4 member states.

To sum it up, partial conclusion can be made that there is no obvious increase of trade in countries with common currency. The development of net balance of foreign trade is probably influenced by other factors. This topic has been already analysed more briefly by authors in other articles, for example Kovárník, Hamplová (2016) or Kovárník, Hamplová (2017).

4. Conclusions

This article deals with several foreign trade topics in selected countries from Central Europe, namely in Austria, Germany, the Czech Republic, Slovakia, Poland, and Hungary. Firstly, the development of GDP per capita has been evaluated, because foreign trade is important part of GDP formula of every open economy in current globalized world.

This analysis shows expected result that the strongest economy is Austria followed by Germany. The position of these countries is far better than the position of V4 countries, where the strongest one is the Czech Republic followed by Slovakia.

Second analysed topic has been openness of the economy, which can be measured by several different methods. One of the most frequently used is the export on GDP ratio. Based on this calculation can be the Czech Republic, Slovakia, and Hungary considered as relatively open economies, where Austria, Germany, and Poland are relatively closed ones. This result is not surprising in case of Germany, which is both large and economically powerful country, but it can be relatively surprising in case of Poland and Austria. Poland is large country with a lot of inhabitants, but it is economically weak. Austria, on the hand, is small country with less than 10 billion of inhabitants, but it is economically very powerful.

Last analysed topic has been the development of foreign trade in the countries with Euro compared with the countries without this currency. Germany and Austria have been using Euro for the whole analysed period, Slovakia has been using Euro since 2009, and other analysed countries have their own currencies. However, the simple fact of same currency has no obvious impact on the development of foreign trade. Other influences affecting foreign trade have probably stronger impact on this development.

To sum it up, foreign trade is very complex topic. It can be analysed from a lot of different perspectives, it is possible to use a lot of special or general statistical tools, but limited space of this article allows analysing only few selected topics with basic descriptive analysis. Nevertheless, even without statistical calculation are some conclusion relatively surprising. The authors would like to continue in this analysis in following papers.

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ROLE OF INTERNATIONAL EXCHANGE OF INFORMATION IN THE FIGHT AGAINST TAX EVASION AND FRAUD IN GLOBALIZED ECONOMY

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Abstract. Tax evasion, tax fraud and money laundering through tax havens have belonged to the negative effects of globalization. They are threats to the world economy, its stability and security, and the foundations for democracy in national and international contexts. The System of International Exchange of Financial and Tax Information draft and upheld by the USA (FATCA), subsequently by OECD standards and EU directives have an irreplaceable role in the fight against international tax evasion, tax fraud and money laundering all over the world. The main aim of this paper is to examine quality of international relevant legislation, to explore implementation of the system of international exchange of financial and tax information into financial and tax authorities practice, to explore the effectiveness of the proposed measures of international institutions and national governments in the process of fight and elimination of tax evasion and fraud in the area of direct and indirect taxes.

Keywords: tax evasion and tax fraud, exchange of information, international cooperation

JEL Classification: F65, F36, H25, H26

1. Introduction

Globalizácia významne ovplyvňuje ekonomické procesy a ide „ruka v ruke" s procesmi integrácie. Integračné procesy a politická spolupráca sa v poslednom období výrazne intenzifikujú, predovšetkým v Európe (Achimska, 2016). V medzinárodnom zdanení sa globalizácia presadzuje predovšetkým daňovou harmonizáciou a konkurenciou pri koncipovaní daňových systémov a v neposlednom rade aj koordináciou a kooperáciou daňových správ. Nadnárodné spoločnosti sledujú a využívajú daňové zvýhodnenia, ktoré sú rozhodujúcim kritériom pri rozhodovaní o alokácii kapitálu (Kozub-Skalska, 2017). Daňová konkurencia má mnohé pozitíva a negatíva a je v rozpore s daňovou harmonizáciou. Konkurencia častokrát vedie k „závodom" v znižovaní daňových sadzieb, tzv. „race to the bottom". Vlády sa snažia prilákať mobilnú daňovú základňu znižovaním svojich daní (Sejkora & Novotny, 2017). S globalizáciou sú spojené aj negatívne procesy ako sú daňové úniky, podvody, pranie špinavých peňazí prostredníctvom daňových rajov, ktoré sa stali vážnou hrozbou pre svetovú ekonomiku, jej stabilitu, bezpečnosť a základy demokracie v celom svete. Od druhej polovice 20. storočia zaznamenali daňoví experti ich prudký nárast a na začiatku 21. storočia investigatívni novinári odhalili čoraz viac sofistikovanejšie spôsoby

ich dosiahnutia. Podvody a úniky úzko súvisia s transparentnosťou verejného sektora a mierou korupcie v spoločnosti. Korupcia predstavuje transakciu, ktorá má dopytovú a ponukovú stránku, stretáva sa pri nej agent zastupujúci verejný sektor s klientom (podnikateľmi, občanmi). Potenciál pre korupciu vzniká napr. pri nerovnováhe medzi ponukou a dopytom po verejných službách, pri reguláciách, voľnosti v rozhodovaní, ktorá umožňuje subjektívne vychýlenie rozhodnutí, pri nízkej transparentnosti a absencii zodpovednostných mechanizmov (Zemanovicova & Vasakova, 2017). Závislosť medzi fiškálnou decentralizáciou a rozsahom korupcie je predmetom prieskumu (Fisman & Gatti, 2002). Nelegálne získané peniaze jednotlivci aj podnikateľské subjekty skrývajú v daňových rajoch. Boom daňových rajov patrí k najzávažnejším negatívnym dôsledkom prehlbujúcej sa globalizácie. Táto problematika je predmetom skúmania vedcov, výskumníkov, daňových expertov, novinárov, pracovníkov štátnej správy, ako aj širokej laickej verejnosti. Ekonómovia sa zameriavajú na teoretické vymedzenie a rozdiely medzi daňovými únikmi a vyhýbaním sa daňovej povinnosti. Zníženie dane porušením zákona je daňový únik, ktorý je trestným činom. Vyspelé daňové jurisdikcie však považujú za neprijateľný nielen daňový únik, ale i vyhnutie sa dani. K neprijateľnému vyhnutiu sa dani vedie taká séria transakcií, v ktorých sa zneužíva daňová legislatíva (Kubicova, 2008).

Svetoví autori orientujú pozornosť na súčasné problémy ekonomiky sveta a príčiny nerovností (Piketty, 2014), ďalej na históriu, príčiny vzniku a kvantifikáciu daňových únikov v daňových rajoch vo svete (Zucman, 2015, A). V podmienkach SR výskumné kolektívy skúmali príčiny zakladania offshore a onshore spoločností slovenskými podnikmi vo svete (Kristofik et al., 2017). Na daňové úniky a finančnú kriminalitu sú zamerané publikácie (Stieranka et al., 2016). Dôkazom rozsahu a hrozieb nelegálnych aktivít jednotlivcov a nadnárodných spoločností vo svete sú odhalené a zverejnené výsledky investigatívnych aktivít Medzinárodného združenia investigatívnych novinárov (ICIJ) v dokumentoch Panama Papers v roku 2016 a Paradise Papers v roku 2017. V posledných desaťročiach sa daňové úniky stali predmetom spoločného výskumu ekonómov, psychológov, sociológov a filozofov nielen pri skúmaní ich príčin, ale aj preto, aby sa interdisciplinárne poznatky týchto vedných disciplín využili na ovplyvnenie správania daňovníkov. Ide o nový koncept, ktorý vychádza zo základov behaviorálnej ekonómie (Ariely, 2015; Thaler & Sunstein, 2010; Kahneman, 2011). Behaviorálna ekonómia v daňovej oblasti skúma príčiny, prečo ľudia nechcú platiť dane. Ide o hľadanie otázok, čo je za tým. Je za tým neznalosť daňových zákonov? Neochota platiť dane ako forma vzdoru a odporu? Nízka kvalita daňovej legislatívy, neúčinnosť a nedôslednosť daňových kontrol? Nízka úroveň pokút a sankcií?

2. Cieľ a metódy výskumu

Boj proti daňovým únikom a ostatným negatívnym javom v daňovej oblasti má veľa foriem. Jednou z nich je aj medzinárodná výmena finančných a daňových informácií koncipovaná a presadzovaná USA, OECD, EÚ a SR. Cieľom príspevku je prezentovať návrhy svetových ekonómov v boji proti daňovým únikom, podvodom a využívaniu daňových rajov pri praní špinavých peňazí, mieru ich uplatnenia v praxi, ďalej zistiť účinnosť navrhovaných opatrení medzinárodných inštitúcií a národných vlád v oblasti medzinárodnej výmeny informácií pri eliminovaní daňových únikov a podvodov v oblasti priamych a nepriamych daní. Základnými metódami prieskumu je analytická a syntetická metóda, metódy indukcie a dedukcie a komparatívna analýza pri hodnotení medzinárodnej výmeny informácií vo svete a OECD. Ďalej vyhodnotenie informácií a údajov získaných prostredníctvom dotazníkov a

štatistík členských štátov EÚ, ktoré sa týkajú práce na uplatňovaní smernice o medzinárodnej výmene informácií EÚ, ako aj praktických skúseností v rámci spolupráce s inými členskými štátmi.

3. Výsledky výskumu

3.1 Zhodnotenie účinnosti medzinárodnej výmeny informácií v boji proti daňovým únikom, podvodom a daňovým rajom vo svete (USA, OECD)

Účinnejšia výmena informácií kompetentných orgánov vo finančnej a daňovej oblasti je po desaťročia predmetom záujmu teoretikov (Bacchetta & Espinosa, 1995). Až zverejnenia ICIJ v dokumentoch Panama Papers a Paradise Papers ukázali hrozivý rozsah a závažnosť, sofistikované spôsoby, hrozby a negatívne dôsledky tohto celosvetového fenoménu v globalizovanom svete. Na dokumenty ICIJ reagovalo 300 svetových ekonómov z viac ako 30 krajín sveta vyhlásením, že daňové úniky, podvody a daňové raje výrazne deformujú fungovanie svetovej ekonomiky. Negatívne dôsledky ich existencie sa neprejavujú len v ekonomickej oblasti, ale ide aj o sociálne, bezpečnostné a humanitárne dopady v národnom aj medzinárodnom kontexte, ktoré sa navzájom prelínajú, kombinujú a znásobujú svoje účinky v negatívnom synergickom efekte. To je hlavný dôvod, prečo boli v boji proti daňovým rajom navrhnuté tieto opatrenia:

- vytvoriť celosvetový register vlastníkov svetového bohatstva pod dohľadom MMF, ktorý by bol k dispozícii pre regulačné orgány ale neverejný pre širokú verejnosť,
- uplatňovať finančné a obchodné sankcie uvalené na tie daňové raje, ktoré by odmietli spoluprácu a reformy,
- vytvoriť účinný systém výmeny informácií vo svete pri odhaľovaní vlastníkov účtov v daňových rajoch,
- uplatňovať vysoké pokuty,
- v rámci navrhovaného systému CCCTB zaviesť systém rozdeľovania firemného zdaniteľného zisku nadnárodných korporácií na základe kritérií - faktorov, napríklad tam, kde sú zrealizované predaje, alebo kde sú v skutočnosti zamestnanci (Zucman, 2015, B).

Predstavitelia G 20 na samite v r. 2009 vyhlásili „koniec bankového tajomstva" vo svete. Zhodnotenie účinnosti: Presadiť opatrenie je náročné a preto v reálnom živote došlo len k jeho miernemu obmedzeniu. Presviedčanie nestačí. Mnohé krajiny - daňové raje súhlasia so spoluprácou, často krát len formálne a poskytujú informácie sporadicky. Výsledkom je absencia silného nástroja na zrušenie bankového tajomstva a vynútenie výmeny informácií. Doteraz uplatňované sankcie nie sú dostatočne účinné.

V marci 2010 bol v USA prijatý právny predpis FATCA (Foreign Account Tax Compliance Act), ktorý má zabrániť americkým daňovníkom páchať daňové úniky schovávaním prostriedkov v neamerických finančných inštitúciách. Právny predpis je účinný od júla 2014, na základe ktorého sa uskutočňuje automatická výmena informácií medzi zahraničnými bankami a IRS. Neamerické finančné inštitúcie vo svete musia identifikovať spomedzi svojich klientov daňových rezidentov USA a hlásiť IRS požadované údaje. Ak neamerické inštitúcie nebudú konať v súlade s FATCA, bude na ich príjmy z amerických

zdrojov (US source income) uložená zrážková daň vo výške 30 %. Modelovaním – výberom medzi zrážkovou daňou a výmenou informácií sa zaoberá (Huizinga & Nielsen, 2003).

Zhodnotenie účinnosti: Opatrenie sa stretlo s veľkou nevôľou a kritikou. Dôvodov je viacero. Finančné inštitúcie musia získavanie dát o amerických subjektoch a následné zasielanie do USA uskutočňovať na vlastné náklady. Mnohé banky vo svete však nechcú robiť biznis s inštitúciami, ktoré nerešpektujú FATCA. Napriek kritike prakticky každá banková skupina rozhodla investovať do implementácie FATCA značné prostriedky a od júla 2014 identifikuje, monitoruje a podáva reporty o amerických daňových rezidentoch. Ďalšími dôvodmi je veľká komplexnosť regulácie (predpis obsahuje takmer 500 strán požiadaviek) a extrateritoriálna pôsobnosť - identifikácia, monitoring a reporty o amerických klientoch, t. j. narábanie s osobnými údajmi klientov je problematické častokrát z hľadiska dodržiavania lokálnych zákonov. Uvedené problémy sa riešia prostredníctvom bilaterálnych medzivládnych dohôd IGA (Intergovernmental Agreements) s partnerskými štátmi. Modelová IGA vznikla ako výsledok spolupráce USA so štátmi G5 (Veľká Británia, Nemecko, Francúzsko, Španielsko a Taliansko). Bilaterálne medzivládne dohody IGA zakotvujú záväzok partnerského štátu, že jeho lokálne finančné inštitúcie získavajú požadované údaje, ktoré hlásia lokálnemu orgánu štátnej správy, ktorý ich ďalej hlási IRS do USA (Model 1 IGA). Druhá verzia (Model 2 IGA) znamená, že lokálne finančné inštitúcie hlásia požadované dáta priamo IRS do USA. Bilaterálne medzivládne dohody IGA podpísalo 113 krajín vrátane Slovenska. SR podpísalo IGA dohodu s USA „tzv. agreement in substance", v ktorej sú obsiahnuté podstatné náležitosti modelovej IGA. Medzivládne dohody odstránili problémy s nakladaním osobných údajov a sú v „kompaktnom" znení (Príloha 1 IGA), ktorá obsahuje povinnosti týkajúce sa zisťovania údajov o amerických klientoch. Väčšina slovenských finančných inštitúcií implementovala požiadavky IGA do svojich vnútorných procesov s účinnosťou od 1.7.2014.

OECD po desaťročiach neúčinných snáh proti daňovým rajom spolu s orgánmi EÚ začali v prvej dekáde 21.storočia podnikať zásadnejšie opatrenia. V roku 2013 OECD prijala dokument opatrení Global Automatic Exchange of Information (GAEI), na základe ktorej sa má zabezpečiť globálna automatická výmena informácií. Finálne znenie zverejnila OECD v júli 2014, kedy bol vydaný tzv. Štandard pre automatickú výmenu informácií v daňovej oblasti (AEOI) a jeho nosná časť – tzv. Common Reporting Standard (CRS). Tento štandard je veľmi podobný dokumentu FATCA s tým rozdielom, že FATCA požaduje zisťovanie a hlásenie daňových rezidentov USA, avšak štandard AEOI požaduje zisťovanie a hlásenie všetkých daňových rezidentov zúčastnených strán. Ide vlastne o celosvetový štandard a preto sa mu hovorí aj „globálna FATCA" alebo GATCA. V roku 2014 podpísali štáty tvoriace skupinu „tzv. Early Adopters" mnohostrannú dohodu kompetentných orgánov (MCAA), na základe ktorej bolo CRS implementované už od 1.1.2016, to znamená, že prvá automatická výmena informácií sa začala realizovať od 1.1.2017 a obsahuje dáta z roku 2016. Pre niektoré štáty sa uplatňovanie dohody GATCA uplatňuje od 1.1.2017, resp. až od 1.1.2018. Finančné inštitúcie zisťujú, monitorujú a nahlasujú údaje o finančných účtoch klientov svojim lokálnym orgánom štátnej správy, ktoré ich nahlasujú daňovým orgánom v krajine, v ktorej majú subjekty svoju daňovú rezidenciu. Doteraz deklarovalo 93 štátov svoje odhodlanie posilniť medzinárodnú výmenu informáciu a spoluprácu v boji s daňovými únikmi, z toho 52 krajín podpísalo MCAA už v roku 2015 a 2016 a ďalších 41 krajín vrátane Ruska a Číny sa zaviazalo k prístúpeniu AEOI prostredníctvom podpísania MCAA v ďalších rokoch.

Zhodnotenie účinnosti: GATCA predstavuje významný nástroj boja proti daňovým únikom, a ďalší krok k intenzívnejšej spolupráce príslušných orgánov zmluvných strán na základe automatickej výmeny informácií. Prekonať finančnú neprehľadnosť je veľmi náročné a doteraz neúčinné. Väčšina účtov v daňových rajoch je skrytá v shell companies, nadáciách, fondoch, ktorých cieľom je legálne alebo nelegálne prerušiť spojenie a zakryť skutočných vlastníkov peňazí, ktorí patria medzi najbohatších. Do automatickej výmeny informácií je zapojená len malá časť daňovníkov, ktorí nemajú prístup do shell companies a ide len o malý zlomok dát, ktoré sú poskytnuté v automatickej výmene informácií. Daňové inštitúcie nemajú prostriedky overiť celý systém a vytvoriť systém kontroly a overovania založený na „provokatéroch a udavačoch" je slabá stratégia boja.

OECD v novembri 2016 schválila znenie Multilaterálneho nástroja (MLI), ktorý umožňuje rýchlu novelizáciu bilaterálnych zmlúv o zamedzení dvojitého zdanenia a implementáciu prijatých opatrení projektu BEPS (Base Erosion and Profit Shifting). Multilaterálny nástroj pomôže lepšie a rýchlejšie reagovať na nevhodné praktiky v oblasti agresívneho daňového plánovania nadnárodných firiem.

3.2 Medzinárodná výmena informácií v boji proti daňovým únikom, podvodom a daňovým rajom v Európskej únii

Vybudovanie a efektívne fungovanie vnútorného trhu patrí medzi hlavné priority EÚ. Na dosiahnutie tohto cieľa Únia potrebuje kvalitnú legislatívu v oblasti účinnej a efektívnej spolupráce medzi daňovými správami členských štátov. EÚ a jej členské štáty musia posilniť boj proti cezhraničným daňovým podvodom, daňovým únikom a vyhýbaniu sa daňovým povinnostiam a zabezpečiť zdaňovanie ziskov tam, kde vznikajú. Administratívna spolupráca je teda kľúčová. Je škodlivé, keď 28 samostatných daňových správ členských štátov pracuje izolovane. Na základe princípu daňovej suverenity daňový systém každého členského štátu zostáva vo veľkej miere vnútroštátnou otázkou, avšak podnikateľské prostredie je čoraz viac globalizované, mobilné a digitálne. Podniky dokážu presúvať zisky do zahraničia, daňovníci môžu dosahovať príjmy v zahraničí a daňové rozhodnutia jedného štátu môžu mať dosah na daňovú základňu iných členských štátov. V podmienkach globalizovanej ekonomiky potrebuje EÚ vysokú mieru spolupráce medzi členskými štátmi s cieľom zabezpečiť, aby všetci daňovníci, či už jednotlivci alebo podniky na základe medzinárodne dohovorených pravidiel a princípov prispievali adekvátnym podielom v správnom štáte do verejných rozpočtov. Prvou smernicou o vzájomnej spolupráci v daňovej oblasti bola smernica o vzájomnej pomoci 77/799/EHS prijatá v roku 1977. V roku 2005 prijala EÚ Smernicu zdaňovania úrokových príjmov FO (EU Saving Tax Directive), v ktorej súčasťou iných princípov bola automatická výmena informácií členských krajín EÚ a prechodný režim členských krajín EÚ (Rakúsko, Luxembursko, Belgicko) a Švajčiarska s uplatnením metódy úplného zápočtu.

Zhodnotenie účinnosti: Automatickú výmenu informácií tejto smernice možno hodnotiť pozitívne. Avšak prechodný režim zdaňovania úrokových platieb v krajinách Rakúsko, Luxembursko, Belgicko a Švajčiarsko 35%-nou zrážkovou daňou spôsobil negatívnu zmenu správania sa daňovníkov. Platnosť tejto smernice skončila 31.12.2016.

Na základe analýz legislatíva EÚ bola doteraz orientovaná na boj proti daňovým únikom a podvodom predovšetkým v oblasti DPH a proti vyhýbaniu sa daňovým povinnostiam a agresívnemu daňovému plánovaniu. EÚ na základe iniciatívy BEPS (Base Erosion and

Profit Shifting) prijala niektoré opatrenia v boji proti vyhýbaniu sa daňovým povinnostiam, najmä balík opatrení ATAP (Anti Tax Avoidance Package), smernicu Rady ATAD (Anti Tax Avoidance Directive). Posledné návrhy Európskej komisie sa orientujú aj na:

- automatickú výmenu informácií a nové pravidlá transparentnosti,
- nový návrh smernice o daňových sprostredkovateľoch,
- prijatie piatej smernice boja proti praniu špinavých peňazí,
- tvorbu čierneho zoznamu daňových rajov (po vzore zoznamu OECD).

Zamerajme pozornosť na analýzu a hodnotenie administratívnej spolupráce a výmeny informácií v daňovej oblasti. V roku 2011 bola prijatá smernica Rady 2011/16/EÚ o administratívnej spolupráci v oblasti daní (DAC), ktorá nahradila smernicu o vzájomnej pomoci 77/799/EHS (MAD). Prostredníctvom smernice sa podarilo dosiahnuť zlepšenia najmä v týchto oblastiach:

1. Rozšírenie rozsahu pôsobnosti tak, aby zahŕňal všetky predvídateľne relevantné informácie týkajúce sa nielen priamych daní, ale aj všetkých nepriamych daní okrem DPH a spotrebných daní.
2. Zosúladenie noriem EÚ s článkom 26 ods. 4 a 5 Modelovej zmluvy OECD o zdaňovaní, čím sa okrem iného zabezpečila výmena informácií aj v prípade, ak domáci štát nemá o takéto informácie záujem.
3. Posilnenie automatickej výmeny informácií.
4. Stanovenie lehôt, nových štandardných formulárov a bezpečného kanála na výmenu informácií.
5. Povinnosť členských štátov zapojených do rozsiahlejšej spolupráce s tretími krajinami.

Figure 1: Prehľad smerníc o administratívnej spolupráci a výmene informácií v EÚ v období 1977-2018

Source: (https://eur-lex.europa.eu/legal-content/SK/TXT/PDF/?uri=CELEX:52017DC0781&from=SK)
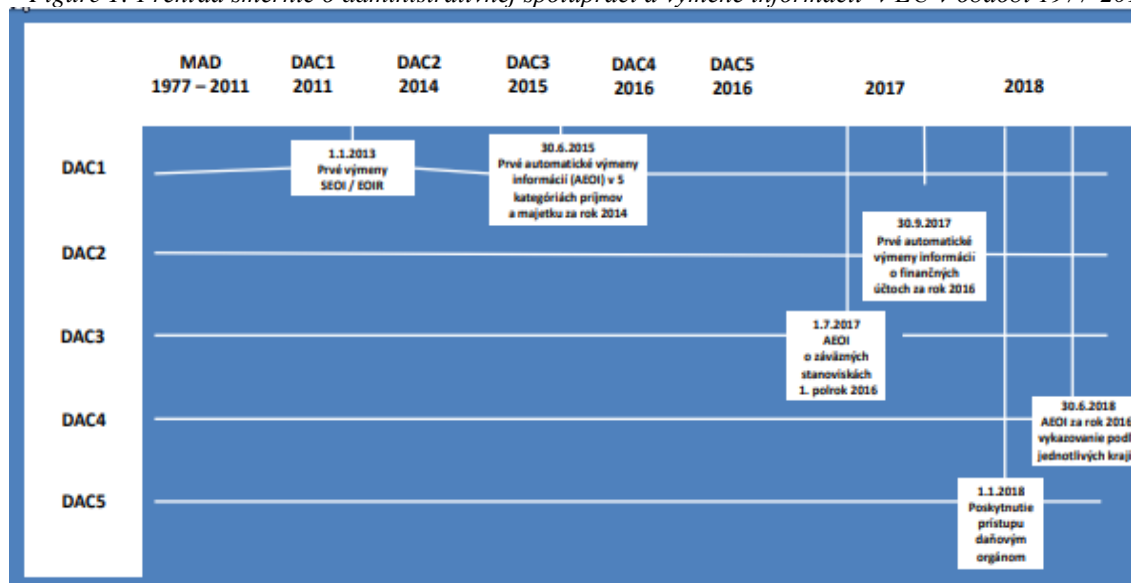
Od roku 2011 bola základná smernica (DAC 1) štyrikrát zmenená prostredníctvom pozmeňujúcich smerníc (DAC 2 až DAC 5) s cieľom posilniť administratívnu spoluprácu medzi členskými štátmi:

- DAC2: smernica 2014/107/EÚ zaviedla automatickú výmenu informácií o finančných účtoch;

- DAC3: smernica 2015/2376/EÚ zaviedla automatickú výmenu daňových záväzných stanovísk a záväzných stanovísk k stanoveniu metódy ocenenia;
- DAC4: smernica 2016/881/EÚ zaviedla automatickú výmenu správ podľa jednotlivých krajín; DAC5: smernica 2016/2258/EÚ na rozdiel od predchádzajúcich pozmeňujúcich smerníc nerozširuje rozsah automatickej výmeny informácií, ale zabezpečuje prístup daňových orgánov k informáciám o skutočnom vlastníctve podľa legislatívy pre boj proti praniu špinavých peňazí.

V legislatíve EÚ je od 1.1.2013 zakotvená požiadavka predkladať každých päť rokov správu o uplatnení smernice. Prvá správa Komisie v 2018 obsahuje zhodnotenie uplatnenia a účinnosť opatrení prvej smernice DAC, pretože na základe pozmeňujúcich smerníc DAC2 až DAC4 sa výmeny len začali alebo len začnú uskutočňovať, ako uvádza graf (časové údaje o prvých výmenách). Komisia predloží k 1.1.2019 druhú správu obsahujúcu prehľad a hodnotenie štatistických údajov a informácií podľa smerníc DAC1 až DAC 3.

3.3 Výsledky prieskumu a zhodnotenie účinnosti opatrení v medzinárodnej výmene informácií v Európskej únii

Prieskum bol zameraný na účinnosť kľúčových ustanovení smernice, predovšetkým výmena informácií (EOI) v rôznych podobách: výmena informácií na požiadanie (EOIR), spontánna výmena informácií (SEOI), automatická výmena informácií (AEOI) a iné formy spolupráce na základe všeobecných podmienok administratívnej spolupráce v oblasti priamych daní: prítomnosť v správnych úradoch, účasť na administratívnych zisťovaniach, simultánne kontroly a žiadosti o oznámenie a všeobecné podmienky, ktorými sa riadi administratívna spolupráca v oblasti priamych daní. Na základe analýzy sa dospelo k týmto 3 zisteniam.

1.Ustanovenia DAC sa vykonávajú, ale nie všetky sa vykonávajú efektívne.
DAC sa uplatňuje správne, avšak v niektorých oblastiach možno dosiahnuť zlepšenia: predovšetkým výmena informácií na požiadanie (EOIR) neprebieha dostatočne rýchlo. Prostredníctvom spontánnej výmeny informácií (SEOI) si členské štáty vymieňajú informácie, ktoré môžu byť relevantné pre správu iného členského štátu a z hľadiska presadzovania domácich daňových právnych predpisov. V priebehu rokov došlo k spontánnej výmene niektorých informácií, ale táto spontánna výmena informácií nedosiahla maximálnu efektívnosť, najmä pokiaľ ide o cezhraničné daňové záväzné stanoviská a záväzné stanoviská k stanoveniu metódy ocenenia. Pri afére LuxLeaks sa jasne ukázalo, že administratívna spolupráca v tejto oblasti nefungovala a preto Komisia v roku 2015 navrhla smernicu DAC3, podľa ktorej sú členské štáty povinné automaticky vymieňať informácie o svojich záväzných stanoviskách. Celkový počet úplných odpovedí poskytnutých v lehote šiestich mesiacov od dátumu prijatia žiadostí, predstavoval v období 2013-2016 v priemere 62 %. Podľa DAC1 o povinnej automatickej výmene informácií (AEOI) sa informácie začali povinne vymieňať od 1. 1. 2015 v piatich kategóriách príjmov a majetku (príjmy zo závislej činnosti, tantiémy, určité produkty životného poistenia, dôchodky a vlastníctvo nehnuteľného majetku a príjmy z nehnuteľného majetku). Z analýzy však vyplýva, že členské štáty majú ťažkosti s využitím týchto informácií z rôznych dôvodov (predovšetkým nedostatočné a nejednotné automatizované procesy na identifikáciu daňovníka a i.). V oblasti inej formy spolupráce (napr. účasť daňových kontrolórov na území iného členského štátu; simultánne daňové kontroly atď.) sú

výsledky nedostatočné. V porovnaní s mierou cezhraničnej aktivity v Európe alebo s celkovým počtom auditov vykonaných daňovými správami je spolupráca veľmi obmedzená a mala by byť rozsiahlejšia. Výsledkom intenzívnejšej spolupráce by bola aj väčšia daňová istota pre cezhraničných daňovníkov, ak by sa podarilo viac sprehľadniť a zosúladiť rôzne spôsoby, ktorými ich daňové správy kontrolujú.

2. Výsledkom uplatňovania výmeny informácií v zmysle DAC bolo výrazné zvýšenie množstva údajov, ktoré musia daňové správy spracovať, ale ich kapacita v tomto smere sa v priemere nezvýšila v rovnakej miere.

Objem dát, ktoré sa vymieňajú na základe DAC, je vysoký a po implementácii ďalších ustanovení o AEOI bude ešte väčší. Finančné prostriedky vyčlenené na riadenie tohto toku však ostávajú obmedzené. Podľa informácií daňových správ členských štátov, počet zamestnancov vyčlenených na administratívnu spoluprácu v rámci EÚ na ústrednom kontaktnom úrade vo väčšine členských štátov je v rozpätí od 1 do 5 úradníkov a počet ďalších pracovníkov na daňových úradoch v členských štátoch zaoberajúci sa spoluprácou a výmenou informácií sa výrazne nezvýšil. To svedčí o tom, že niektoré členské štáty len minimálne investujú do administratívnej spolupráce v rámci EÚ. Pritom výskumné štúdie (Melnikov et al., 2017), resp. (Vavrová & Bikár, 2016) navrhujú konkrétne reformné stratégie daňových správ vo svete. Informačno-technologické prostriedky používané v členských štátoch slúžia najmä na vytváranie bezpečného prostredia pre automatické výmeny. Práca v oblasti IT zameraná na automatické využitie prijatých informácií je ešte len na začiatku. Daňové správy v jednotlivých členských štátoch majú stále ťažkosti s tým, ako vyriešiť automatické priradenie údajov, ktoré prichádzajú prostredníctvom automatickej výmeny informácií, k vlastnej daňovej databáze.

3. Posúdenie prínosov DAC sa vykonáva príliš skoro.

Cieľom DAC je prostredníctvom lepšej dostupnosti údajov a spolupráce zabezpečiť, aby sa znížila miera cezhraničných daňových únikov, daňových podvodov a vyhýbania sa daňovým povinnostiam. Takmer päť rokov potom, čo DAC nadobudla účinnosť, v tomto smere existuje len málo poznatkov o skutočných účinkoch vykonávania DAC. Komisia každoročne požaduje údaje o hodnote vzniknutých daňových prínosov administratívnej spolupráce (bez ohľadu na jej podobu), ale túto informáciu dokáže poskytnúť alebo odhadnúť len málo daňových správ. Existuje všeobecná zhoda v tom, že táto informácia v peňažnom, ako aj behaviorálnom vyjadrení by bola užitočná, ak by jej vyčíslenie bolo spoľahlivé. Pre členské štáty je však náročné prepojiť tieto údaje s administratívnou spoluprácou, na rozdiel napríklad od iných vnútroštátnych iniciatív zameraných na dodržiavanie predpisov. Okrem toho je zložité vyčísliť aj odradzujúci účinok plynúci z intenzívnejšej spolupráce.

Na základe výsledkov analýzy je potrebné prijať opatrenia:
  a) komplexne a transparentne implementovať DAC všetkými členskými štátmi EÚ;
  b) zvýšiť finančnú a personálnu kapacitu členských štátov EÚ v oblasti administratívnej spolupráce a výmeny informácií a skvalitniť informačné zabezpečenie;
  c) spracúvať kvalitnejšie a transparentnejšie správy o implementácii DAC v členských štátoch a o ich prínosoch.

4. Conclusion

Negatívne dôsledky globalizácie ekonomiky, medzi ktoré patria aj daňové úniky, podvody, pranie špinavých peňazí prostredníctvom daňových rajov, vážne ohrozujú svetovú ekonomiku. Cieľom príspevku bolo preskúmať návrhy popredných svetových expertov v tejto oblasti, zhodnotiť účinnosť navrhovaných opatrení USA, OECD a EÚ v oblasti medzinárodnej výmeny informácií pri eliminovaní daňových únikov a podvodov. V posledných desaťročiach sa vo svete vyvíja veľké úsilie zmierniť medzinárodné daňové podvody a úniky, ktoré je však len na začiatku. Pozitívne výsledky sa môžu prejaviť vtedy, ak medzinárodná spolupráca a výmena informácií bude intenzívnejšia, kvalitnejšia, a transparentnejšia.

Acknowledgment

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IMPACT OF RECESSION ON THE ECONOMIC GROWTH

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Abstract. The recession of 2007-2009 became the first global recession of the new century, which had spread over the bigger part of global economy. During the next 10 years, there were slowdown of economic growth and several autonomic recessions, that had mostly affected developing countries. The paper deals with the global crises impact on economic growth rate in the period of post-crises recovery. Several stylized facts, characterizing the business cycles, were highlighted. Global recessions covering synchronously the bigger part of global economy are rare phenomenon. During the review period, only two crises can be attributed to this type. Autonomic recessions appear in particular countries or in a group of countries, mismatch in the inflection point is from 1 to 5 years. The business cycles running time can differs from 1.5 to 30 years, frequency is not strict, at the same time the majority of cycles duration is 7 years. The beginning of recessions were at the same time or close to each other only in the period of global recessions and in the countries that have grate coherence in economic growth or in interconnected countries. Growth rates are not constant during some of the cycles. Regression analysis showed that growth rate in one cycle (which is determined as the period of time between two nearby peaks) depends on duration and depth of recession which was at the beginning of the cycle. The acceleration of recovery growth is not enough to compensate the crisis losses.

Keywords: global recession, business cycles, trend break, economic growth

JEL Classification: E 32, F01, F43

1. Introduction

The recession of 2007-2009 became the first global recession in the new century. It affected the major part of the global economy and was called the Great Recession. After it was over recovery growth was slow and non-steady. Various economies faced autonomous recessions. (Kliestik et al., 2018) The question of whether weak economic growth is a unique feature of the recession or a characteristic feature of the new normal entered by the global economy is still a matter of discussion.

2. Specific characteristics of recovery growth after the Great Recession

The duration of the Great Recession and the instability of post-crisis development, primarily in developed countries, caused the revival of A. Hansen's idea of Secular Stagnation, which had not been confirmed in the last century. (Hansen, 1939) Introducing such concepts is itself based on pessimistic sentiments determined by serious economic tremors rather than on the analysis of current dynamics. (Kapeliushnikov, 2015) As opposed to cyclical recessions when economy returns to the persisting trend through acceleration during post-crisis period, secular stagnation presupposes a change of trend, a transition of economy to little dynamic potential. According to L. Summer, slow post-crisis recovery and transition to long-term little dynamic potential is related to the existence of sustainable inherent negative output gap, which stems from the demand deficit. (Summers, 2014) J. Stiglitz finds the cause of slow growth after the Great Recession in the mistakes within pursued state policy. (Stiglitz, 2010) Another approach to explaining the nature of growth inhibition lies in the characteristic of recovery growth which does not compensate the loss of output during the downturn and, consequently, the more often recessions take place and the deeper the output drop, the lesser is the degree of compensating the loss of output with recovery growth. As a result of the analysis of 150 recessions in 23 developed countries during last 40 years Martin, R., Munyan T., Wilson B.A. (Martin et al., 2015) were unable to reveal any accelerated recovery growth, which must result in the return to the trend.

In comparison to the previous decade the decrease in the pace of growth after the depression affected all market economies. With that, some of them faced autonomous recessions of various depth and duration. In terms of the Russian economy, the recession of 2015-2016 significantly differed from the previous one based on a number of features, which allowed us to point out a special nature of undergoing crisis. It lies in the depleted possibilities of development model formed within the previous cycle and manifests itself in growth retardation. (Mau, 2015; Klepach, 2015) Consequently, serious discussions arise on the possibilities of countercyclical policy in these conditions. On the one hand, evening out a cycle should contribute to maintaining a long-term pace of growth. (Klepach, 2017; Ryazanov, 2016) On the other hand, stimulating economy through increasing aggregate demand in this situation cannot accelerate growth over the long-term, but will pose a threat of inflation acceleration. (Mau, 20175) Fast recovery growth is also impeded by imperfections of institutional structure that restrict impetuses for economic activity. (Grigoriev, 2013) Though in this case this is not a question of century old stagnation, but the process of structural changes that has to be triggered by structural or systemic crisis also require a prolonged period. (Frenkel et al., 2013)

To evaluate the specificity of post-crisis situation of the last decade and Russian autonomous recession it is necessary to verify how common time irregularities and a pace of growth are for cyclical fluctuations.

3. Features of cyclical downturns and recovery growth

Any cyclical downturn, regardless of the momentum that directly triggered it, is a crisis mechanism for the recovery of optimized reproduction proportions. The recession causes losses to all economic agents, however, a number of sectors and companies have to reduce the output while releasing resources and creating conditions for fast growth for others during

economic recovery. Total downturn damage include both redistribution expenses and pure losses related to output slowdown in all sectors of economy, reduction in utilization of resources, primarily labor. In this respect, any cyclical crisis also serves as a form of resolving a conflict between an established structure of economy and demand for economic growth.

By now there is a certain consensus in economics concerning the definition of cyclical crises (downturns). The classical definition of cycle used for its dating since 1946 includes a number of important points. "Business cycles are a type of fluctuation found in the aggregate economic activity of nations **that organize their work mainly in business enterprises**: a cycle consists of expansions occurring at about the same time in many economic activities, followed by similarly general recessions, contractions, and revivals which merge into the expansion phase of the next cycle; **this sequence of changes is recurrent but not periodic; in duration business cycles vary from more than one year to ten or twelve years**; they are not divisible into shorter cycles of similar character with amplitudes approximating their own.". (Burns & Mitchel, 1946) *(*put in bold by us). Consequently:

1) Cyclical fluctuations should be considered in relation to countries in which production activity is performed mainly at private enterprises. Therefore, it is unreasonable to search for cyclical fluctuations in centrally planned economies, countries with a large proportion of natural economy etc. Only for this reason global recession cannot seize the whole economy.

2) There are no strictly determined intervals between similar economic conditions. Recessions can start at various intervals. Of importance are the state of economy and an external trigger of the disturbance of the balance.

Determining turning points represents a different independent research task. The statistics of business cycles in the US economy is collected by The National Bureau of Economic Research (NBER), while their dating is performed by the US Business Cycle Dating Committee. Similar tasks in the euro-area are performed by the Centre for Economic Policy Research (CEPR) and Euro Area Business Cycle Dating Committee. The latter keeps the timeline of recessions and peaks of business activity. Turning points in European business cycles are identified from 1970 to 1998 in 11 countries that were initially within EEC as well as Greece and starting from 1999 in Eurozone member states as such. Emergency Care Research Institute (ECRI) in the USA has provided with dating of turning points in 21 country of the world since 1949. As researches of the center state: "Each recession is unique, triggered by a different set of factors. This leads to wide latitude in assessing blame for a contraction, even among experts." (Achuthan, Banerji, 2004, p. 69).

Identifying turning points of the cycle is based on the criterion of two quarters. For example, the abovementioned Euro Area Business Cycle Dating Committee defines a recession as "a significant decline in the level of economic activity, spread across the economy of the euro area, usually visible in two or more consecutive quarters of negative growth in GDP, employment and other measures of aggregate economic activity for the euro area as a whole".[4] The criterion of output decline within two or more quarters is used by all cycle researchers, while analysts consider the dynamics of other significant macroeconomic indices and hence correct downturn start date.

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[4]   https://cepr.org/content/business-cycle-dating-committee-methodology?_ga=2.165415615.   1025444340. 1526853569-1294639380.1526674873

The lack of strict periodicity and predictability of intervals between similar conditions, as long as statistics on cycle behavior is being accumulated, has significantly devalued deterministic cycle models aimed at explaining repetitiveness of economic fluctuations. The attempts to identify internal causes of occasional disturbances of the balance and to provide a tool for predicting turning points based on identified cause-and-effect relations failed. Weak predictive power of models aimed at identifying cause-and-effect relations leading to inevitable fluctuations resulted in the general waiver of them. The interest to such works ranging from K. Marx *Capital* to H. Minsky's the Financial Instability Hypothesis increases during global economic cataclysms like the Great Recession and reduces again with the recovery of normal course of economic life. The probability of another crisis rises when time interval extends after the last downturn. Under certain conditions adjusted countercyclical policy and fast paces of economic growth allow to address an issue of maintaining necessary proportions without destructive compression. In the second half of XX century – beginning XXI century there was an interval between recessions over 16 years at least in 12 cases[5]. Nevertheless, the development of capitalist production is impossible without cyclical fluctuations.

It is necessary to distinguish a number of characteristics of a cyclical downturn:

1. There is no strict concurrency between recessions in national economies both in terms of start date and duration.

According to OECD data from 1970 to 2017 on 35 OECD countries, BRICS countries, Argentina, Indonesia, Lithuania and Columbia, whose economies in total account for more than 90% of the world GDP, since 1970 there were 148 recessions (the data on the countries from Eastern Europe, the Baltics, BRICS, Latin America and Asia are represented starting from 1990s). Two recessions can be qualified as global ones: the crises of 1974-1975 and 2007-2009. The downturn start is dated very close in most countries and coincides in terms of average over groups (OECD, European Union, NAFTA countries). These recessions affected an overwhelming majority of countries. The crisis of 1996-1998 affected states with transformational economy and Asian states. As autonomous recessions we regarded the ones that took place in individual countries, while in terms of average over groups the growth kept increasing. As autonomous recessions we also considered the ones in which the difference in downturn start within an individual country and within a corresponding country group amounted to more than a year. During the considered period 44 recessions were autonomous, which means they affected some economies but in terms of average over country groups the growth continued.

In general, the correlation of quarter GDP growth rate (in constant prices of 2008) is not high countrywise in total by a corresponding quarter of a previous year – the arithmetic mean value of pair correlation coefficient exceeded 0,5 only in three countries – Slovenia, Estonia and Russia. With 0,60 it is the highest in Russia. At the same time dependency between neighboring states (connected economies) appears to be quite significant (Table 1)

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[5] Business Cycle Peak and Trough Dates, 21 Countries, 1948-2016 //Economic Cycle Research Institute (ECRI) www.businesscycle.com

Table 1: Pair correlation coefficients of quarter indices on economic growth (a quarter to a corresponding quarter of a previous year) from 1970 to 2017.

	Austria	Belgium	Finland	France	Germany	Italy	Netherlands	Portugal	Spain
Austria	1	0,67	0,49	0,76	0,76	0,71	0,69	0,65	0,56
Belgium	0,67	1	0,52	0,79	0,66	0,77	0,71	0,65	0,60
Finland	0,49	0,52	1	0,65	0,36	0,57	0,48	0,45	0,52
France	0,76	0,79	0,65	1	0,71	0,82	0,67	0,75	0,65
Germany	0,76	0,66	0,36	0,71	1	0,72	0,70	0,57	0,44
Italy	0,71	0,77	0,57	0,82	0,72	1	0,67	0,71	0,56
Netherlands	0,69	0,71	0,48	0,67	0,70	0,67	1	0,59	0,65
Portugal	0,65	0,65	0,45	0,75	0,57	0,71	0,59	1	0,64
Spain	0,56	0,60	0,52	0,65	0,44	0,56	0,65	0,64	1

Source: (Calculated with OECD.stat Quarterly National Accounts http://stats.oecd.org/Index.aspx?DataSetCode= QNA)

However, even in EU states except the crises of 1974-1975 and 2008-2009 in the beginning of the recession in 1980s and 1990s differences were quite substantial. In 1980 the downturn started in the economy of the Netherlands, in 1982 – in Belgium, Germany, Italy, in 1983 – in Portugal, in 1984 – in Austria. The EU economy of 1980-1983 generally had a positive growth rate.

Therefore, autonomous recessions are normal. So far global recessions should rather be regarded as an exception. To date there have been no recession that would affect all countries in the world.

2. Cyclical downturns proceed at sporadic intervals, their boundaries are significantly broader than it was supposed by A. Burns and W. Mitchell in 1946.

111 business cycles dated by ECRI in 21 countries in the world are sorted on duration as it is shown at diagram 1. Cycle duration was defined either as time between two peaks of two neighboring cycles or time between a peak of last cycle and the present moment.

Figure 1: Distribution of cycles at intervals by duration (21 countries, 1948-2016)
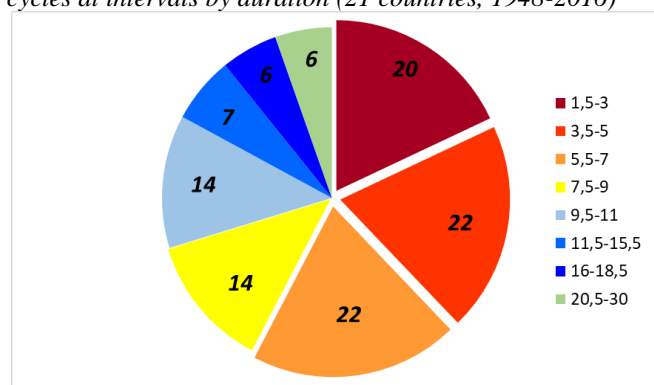
Source: (Business Cycle Peak and Trough Dates, 21 Countries, 1948-2016 //Economic Cycle Research Institute (ECRI) www.businesscycle.com)

As is seen from the diagram, the cycles with duration of less than 7 years account for more than a half of cycles in the countries based on which ECRI keeps its dating. Brazil has experienced recession 8 times since 1987, Switzerland – four times from 1970 to 1990, Austria – four times from 1974 to 1995, Argentina – four times from 2008 to 2017. While a number of countries turned out to be immune during global recessions. China has not faced any cyclical downturns since 1988, Australia – since 1990, India – since 1996. After the end

of transformational crisis Poland has been growing steadily for more than twenty years. It should be noted that each cycle includes a unique combination of sections of various economic dynamics. Recession can be accompanied with a rapid increase after reaching the bottom or prolonged stagnation etc. The correlation between periods of downturns and increases can differ significantly in various cycles. Current approaches to predicting cycle turns are based on modeling interrelations between dynamics of preemptive indices and indices of economic activity, and this is a search for signs of oncoming recession rather than the causes (Pestova, 2013). The lack of strict periodicity in the output dynamics and in instances of downturns resulted in changing the purposes of the research on cyclical fluctuations. If a transition from expansion to recession is caused by exogenous shocks, if there are substantial disproportions accumulated in economy, the key task becomes not explaining the nature of these shocks but analyzing mechanisms of adjusting economy to changed conditions as well as searching for forms of state influence that promote loss minimization with output reduction. The duration of time interval between two similar states of economic environment is not itself a characteristic of the downturn nature. Its cyclical character is determined by the repetitiveness of similar states of economic environment and economic fluctuations around the trend.

3. Economy growth rate in all sorts of cycles can change, and the course of various cycle phases can slow down or accelerate (depending on recession depth and duration).

The hypothesis of recession as moment of trend change was first stated by C. Nelson and C. Plosser (Nelson & C. Plosser, 1982). During economic downturn new conditions evolve that change a potential economy growth rate and after shrinking the economy transits to a new long-term trend. In this case, regardless of the character of the shock, this is not about adjusting economy to demand fluctuations but about a change in output capacity which led to a new pattern of growth. Consequently, as a result of shocks macrorows proceeded to random trends for long and might not return to their deterministic trends, erratic trends require their redefinition within each cycle. With regard to the Russian economy A. Polbin and A. Skrobotov (Polbin & Skrobotov, 2016) distinguish two changes in the long-term growth trend: since III quarter of 1998 the recovery growth rate accounted for 5,3%, from III quarter of 2007 to II quarter of 2015 – 1,3%. To verify how precrisis dynamics of economic growth, recession depth and duration influence an economic growth rate in the current cycle, the following linear regression has been developed:

$$G_c = \Delta G_{t-1} + R_M + G_R + Months + \varepsilon \qquad (1)$$

where G_c – the growth rate in the considered cycle, an interval from the precrisis maximum of the previous cycle to the precrisis maximum of the present cycle,
ΔG_{t-1} – the deviation of economic growth rate the year before the beginning of the cycle from average rates within the cycle,
R_M – the downturn duration in months from peak to bottom,
G_R – the depth of bottom of this cycle in years,
Months – the cycle duration in months from peak to peak,
ε – a regression equation mistake.

It was assumed that if GDP growth rate within the cycle does not equalize with the changes of recovery growth rate, it will negatively depend on downturn duration and depth, but a decrease in the rate in a precrises year will indicate structural problems and should be related to a reduced growth rate in the subsequent cycle. The hypothesis has been partially

confirmed. Regressors DGt-1 and GR turned out to be statistically insignificant. In 36 out of
96 recessions a downturn was preceded by a reduction in growth rate, in the rest 60 cases – by
acceleration. But the precrisis change of economic growth had no impact on subsequent pace.
Judging from available statistics the downturn depth was measured in years but not at the
bottom, which substantially distorted the representation in terms of short and shallow
downturns. After deleting insignificant regressors from the model the following characteristic
equation was obtained:

$$G_c = 2,70 - 0,0648*R_M + 0,0134*Months + \varepsilon \qquad (2)$$
$$(0,320) \ (0,0139) \qquad (0,00203)$$

$R^2 = 0,376$, standard errors are specified in brackets.

<center>Model: OLS, using observations: 96</center>

<center>Dependent variable: G_c</center>

	Coefficient	Std. Error	t-ratio	p-value	
const	2,6982	0,320258	8,4251	<0,0001	***
R_M	−0,0647997	0,0138654	−4,6735	<0,0001	***
Months	0,0134462	0,00202578	6,6375	<0,0001	***

Mean dependent var	2,760816	S.D. dependent var	1,743779
Sum squared resid	180,3864	S.E. of regression	1,392709
R-squared	0,375550	Adjusted R-squared	0,362121
F(2, 93)	27,96558	P-value(F)	3,09e-10
Log-likelihood	−166,4942	Akaike criterion	338,9885
Schwarz criterion	346,6815	Hannan-Quinn	342,0981

Consequently, the growth rate during one business cycle is negatively affected by the
duration of the recession and positively - by the cycle duration. The bigger part of the cycle is
growth phase, the higher is the rate of economic growth for the cycle in general.

4. Conclusion

The statistics of cycles in the global economy shows that global recessions occur relatively
rarely, autonomous crises prevail in terms of quantity affecting certain countries and regions.
It is impossible to specify the exact cycle duration in particular countries, fluctuation range is
quite substantial. The analysis of dependence of recovery growth rate on recession duration
has confirmed the hypothesis of trend change within cycle.

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PROPOSAL OF ECONOMIC MANAGEMENT METHODOLOGY IN SELECTED SEGMENT OF NON-GOVERNMENTAL NON-PROFIT ORGANIZATIONS IN CONDITIONS OF GLOBALIZED ECONOMY

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Abstract. This article presents results of qualitative and quantitative research in the area of economic management of non-governmental non-profit organizations with a specific focus on improvement of management efficiency and development of economic management system in the selected segment of non-governmental non-profit organizations in the holistic context and conditions of the globalized economy. The topic is current because there are practical needs to manage effectively non-governmental non-profit organizations and ensure their sustainable development. Non-governmental non-profit organizations offer in terms of global economy alternative solutions to economic, social and environmental issues and their importance grows mostly from a civil society development point of view. The outcomes of mixed methods research resulted in a proposal of economic management methodology in the selected segment of non-governmental non-profit organizations. The methodology proposal is based on the integration of economic, organizational, communicational and ethical specifics and is structured into organization lifecycle phases with detailed design of operative methodological system of the project. The proposed methodology was verified on a selected sample of non-governmental non-profit organizations on an international scale and the results proved usability of proposed methodology and integrity of primarily non-economic and then also economic goals in the selected segment of non-governmental non-profit organizations.

Keywords: non-governmental non-profit organization (NGO), economic management, communication, organization, non-governmental non-profit organization lifecycle

JEL Classification: L31, L32, F60

1. Introduction

Nestátní neziskové organizace nabízejí v globalizované ekonomice alternativní řešení ekonomických, společenských a environmentálních problémů a narůstá jejich význam zejména z pohledu rozvoje občanské společnosti. V sektoru národního hospodářství působí státní a nestátní neziskové organizace. U státních neziskových organizací, jejichž

zřizovatelem je stát, kraje, obce, případně jejich organizační složky, se jedná především o organizační složky státu a příspěvkové organizace, které zabezpečují výkon státní správy a zajišťují veřejné služby, např. ve školství, zdravotnictví, sociálních službách a ve sportu. Oproti tomu nestátní (nevládní, občanské, soukromé) neziskové organizace (non-governmental non-profit organizations – NGOs) mohou být zřízeny právně způsobilými fyzickými osobami nebo právnickými osobami. Nestátní neziskové organizace jsou založeny na principu sdružování osob žijících a spolupracující v daném prostoru, které vytváří různé typy soukromých neziskových organizací, jejichž hlavním cílem je organizovat a vzájemně spolupracovat v určité oblasti zájmu. Mezi nestátní neziskové organizace patří např. obecně prospěšné společnosti, církve, náboženská sdružení, církevní právnické osoby, spolky, nadace, ústavy a jiné. Nestátní neziskové organizace zabezpečují obdobnou oblast veřejně prospěšných služeb jako státní neziskové organizace. Cílovou funkcí neziskového sektoru je přímé dosažení užitku, nikoliv zisku (Aldashev et al., 2015; Granados & Marturet, 2010; Verbruggen & Christiaens, 2012; Tetrrevova, 2008; Vit, 2015). Existence neziskových organizací je ve velké míře spojena s pojmy "veřejný zájem" či "veřejná prospěšnost". To znamená, že neziskové organizace plněním svých funkcí a činností přispívají k celospolečenskému blahobytu celé společnosti, nebo alespoň významné skupiny obyvatel (Dobrozemsky & Stejskal, 2015).

Konečným strategickým cílem nestátních neziskových organizací je splnění vlastního poslání a vytvoření veřejné hodnoty (Bryce, 1992; Bryson, 1995; Galvez-Rodriguez et al., 2014; Moore, 2000; Spigelman & Evans, 2004; Uzunoglu & Kip, 2014). Nestátní neziskové organizace hrají v tržních moderních ekonomikách významné a nezastupitelné role – role participativní, role servisní a role vyjadřující zájmy a potřeby občanů (Rakusanova, 2007; Sun & Fuschi, 2015; Synek et al., 2015). Pro vytvoření úspěšné nestátní neziskové organizace je důležité mít srozumitelné poslání, strategicky plánovat, mít funkční statutární orgány, mít vícezdrojové financování, rozvíjet firemní kulturu, zajímat se o budoucnost organizace, mít jasné vnitřní procesy a pravidla a snažit se zviditelnit.

2. Formulace problému, cíle a metodologie

Hlavní cíl prezentovaného výzkumu je tvorba návrhu metodiky ekonomického řízení ve vybraném segmentu nestátních neziskových se specifickým zaměřením na zlepšení efektivity řízení a na rozvoj systému ekonomického řízení ve vybraném segmentu nestátních neziskových organizací v holistickém pojetí v podmínkách globalizované ekonomiky. Aktuálnost tématu je vyvolána potřebami praxe efektivně řídit nestátní neziskové organizace a zajistit jejich udržitelný rozvoj. Výsledky předchozího kvalitativního a kvantitativního výzkumu v oblasti identifikace a hodnocení specifik v řídících, ekonomických, organizačních a komunikačních procesech ve vybraném segmentu nestátních neziskových organizací v podmínkách globalizované ekonomiky 21. století vyústily do návrhu metodiky ekonomického řízení ve vybraném segmentu nestátních neziskových organizací. Návrh metodiky je založen na systémové integraci ekonomických, organizačních, komunikačních a etických specifik vybraného segmentu nestátních neziskových organizací a je strukturován do tří etap metodiky životního cyklu nestátní neziskové organizace. Druhá etapa metodiky životního cyklu nestátní neziskové organizace je rozšířena o návrh operativního metodologického systému projektu.

Výsledky prezentované v příspěvku jsou založeny na kvalitativním výzkumu literárních i v elektronické formě zpracovaných pramenů autorů z řad jak akademické sféry, tak z praxe. Konkrétně se jedná především o monografické publikace, výzkumné zprávy, odborné studie, příspěvky a odborné články ve vědeckých časopisech publikovaných k problematice nestátních neziskových organizací v celosvětovém kontextu (Boateng et al., 2016; Dvořáková & Macková, 2014; Dvořáková & Macková, 2016; Iwu et al., 2015; Polonsky et al., 2016; Svidronova & Vacekova, 2012).

Objektem zkoumání byl vybraný segment nestátních neziskových organizací působících v oblasti poskytování služeb občanské veřejnosti v celosvětovém kontextu. Empirická data provedeného kvantitativního výzkumu byla zjištěna dotazníkovým šetřením a expertními rozhovory, které byly provedeny u sedmdesáti dvou legislativně samostatných poboček vybrané mezinárodní nestátní neziskové organizace. Samostatné pobočky mají sídlo ve 25 zemích (Itálie, Německo, Česká republika, Slovensko, Polsko, Velká Británie, Irsko, Francie, Španělsko, Belgie, Lucembursko, Maďarsko, Švédsko, Švýcarsko, Izrael, USA, Mexiko, Kuba, Honduras, Kolumbie, Austrálie, Indie, Zimbabwe, Jihoafrická republika a Nigérie). Jejich primárním posláním je šíření křesťanské víry moderními způsoby (pastorační aktivity). Sběr, analýza a hodnocení dat probíhaly od ledna 2017 do března 2018. Bylo získáno šedesát čtyři odpovědí respondentů z celého světa, kde se vybrané nestátní neziskové organizace nacházejí a kde vykonávají svoji činnost. Dotazník byl zaslán vybraným pobočkám elektronicky a jeho návratnost byla 88,89%. Těžištěm databázového zdroje byla Itálie (16 zpracovaných dotazníků). Všech šedesát čtyři samostatných poboček mezinárodní nestátní neziskové organizace vykazuje v současné době jednotný model organizačního a finančního řízení se zohledněním národních legislativních specifik. Mateřská organizace mezinárodní nestátní neziskové organizace vznikla v roce 1978 na severu Itálie a následně došlo k postupnému zakládání nových právně a ekonomicky samostatných poboček, ve stejném modelu tzv. oáz. Dotazníky obsahovaly cílené otázky k problematice ekonomického řízení se specifickým zaměřením na zlepšení efektivity řízení a na rozvoj systému ekonomického řízení ve vybraném segmentu nestátních neziskových organizací v holistickém pojetí v podmínkách globalizované ekonomiky. Na podkladě výsledků dotazníkového šetření a výsledků expertních rozhovorů a byl vytvořen návrh metodiky ekonomického řízení ve vybraném segmentu nestátních neziskových organizací. Návrh metodiky byl ověřen na vybraném vzorku nestátních neziskových organizací v mezinárodním měřítku a výsledky ověření prokázaly funkčnost navržené metodiky a integritu primárně mimoekonomických a následně ekonomických cílů ve vybraném segmentu nestátních neziskových organizací (dále jen NNO).

3. Výsledky a diskuse

Ekonomika vybraného segmentu NNO je založena na evangelní prosperitě chápané jako sdílení majetku, jež je založeno na dávání. Materiální zajišťování života a všech aktivit pochází z dobrovolného příspěvku členů, biblicky zvaného desátek, z darů a z veřejně prospěšných a podnikatelských aktivit poboček. Každá samostatná nezisková organizace (pobočka) má desátek z příjmů jako životní styl, což považuje za výraz víry a společenství, přičemž každý člen k tomu přistupuje svobodně. Na základě této definice ekonomiky vybraného segmentu NNO byl vytvořen referenční návrh metodiky ekonomického řízení, který je strukturován do dvou hlavních částí. První část se týká životního cyklu samostatných

poboček NNO a druhá část operativního metodologického systému projektu. Životní cyklus samostatných poboček NNO má významnou roli, protože život, budoucnost a dlouhodobá udržitelnost vybraného segmentu NNO závisí na existenci a dlouhodobém fungování samostatných poboček. Životní cyklus má tři hlavní etapy. V rámci druhé etapy životního cyklu samostatných poboček (etapa – Projekt) je detailně zpracován návrh operativního metodologického systému projektu, který se týká metodologie vyhodnocování jednotlivých projektů (pastoračních plánů) a má významné ekonomické dopady na stávající a budoucí fungování NNO (viz obrázek 1).

Figure 1: Návrh metodiky ekonomického řízení ve vybraném segmentu nestátních neziskových organizací
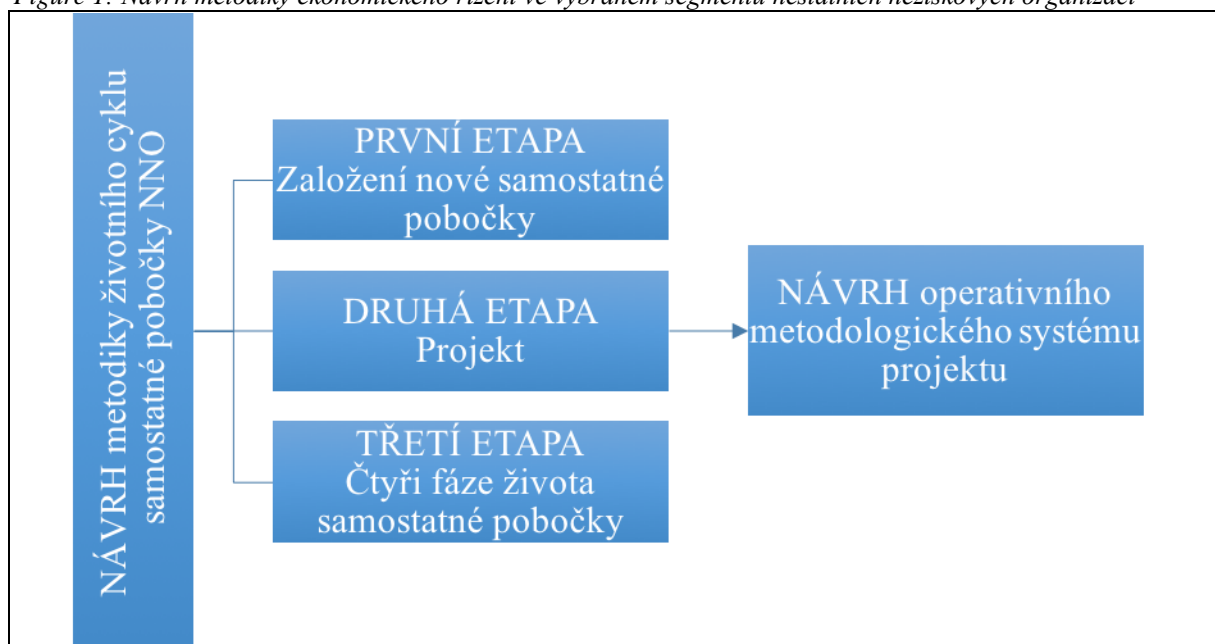
Source: (vlastní zpracování, 2018)

Ekonomické aspekty integrované do navržené metodiky mají za cíl:
1. Zlepšit efektivitu ekonomického řízení ve vybraném segmentu NNO.
2. Identifikovat, analyzovat a hodnotit posloupnost a integritu primárně mimoekonomických a následně ekonomických cílů ve vybraném segmentu NNO.
3. Přispět k rozvoji systému ekonomického řízení ve vybraném segmentu NNO v holistickém kontextu.

Návrh metodiky životního cyklu samostatné pobočky NNO je rozčleněn do tří etap a to:
- Založení nové samostatné pobočky – první etapa;
- Projekt – druhá etapa;
- Čtyři fáze života samostatné pobočky – třetí etapa.

3.1 První etapa - Založení nové samostatné pobočky nestátní neziskové organizace

Založení nové samostatné pobočky ve vybraném segmentu NNO vychází z následujících předpokladů a aspektů:
1. Lídr - pastýř: osoba lídra (pastýře) je prvním předpokladem k založení nové samostatné pobočky. Vysílající NNO, chce-li ve vytypované zemi založit novou samostatnou pobočku, musí mít připraveného lídra, jehož formace trvá minimálně 10

let. Spolu s ním je třeba vytvořit malou skupinu silných členů, kteří se shluknou kolem lídra a jsou jeho oporou.

2. Místo: druhým předpokladem založení nové samostatné pobočky je místo vytipované k vybudování nové samostatné pobočky. Jde o místo, kde bude moci nová skupina v čele s lídrem žít a působit.

3. Kanonické přijetí: třetím předpokladem založení nové samostatné pobočky je kanonické přijetí místním biskupem. Biskup zve samostatnou pobočku do své diecéze, aby zde v dané oblasti trvale působila.

4. Ekonomický aspekt – počáteční finanční vklad: čtvrtým předpokladem je zajištění počátečního finančního vkladu pro zahájení života samostatné pobočky na novém místě, na novém misijním působení. Jde o prvotní finanční zajištění od vysílající organizace, díky němuž může lídr začít pastoračně působit a začít trvale žít v nové samostatné pobočce.

5. Právní aspekt – realizace právní formy samostatné NNO. Jedná se o založení a vznik NNO, kdy dojde k sepsání zakládací listiny zakládajícími členy NNO dle právních předpisů v daném státě.

Pět předpokladů a aspektů první etapy navržené metodiky s důrazem na ekonomický aspekt demonstruje obrázek 2.

Figure2: Schéma založení nové samostatné pobočky ve vybraném segmentu NNO - I. etapa
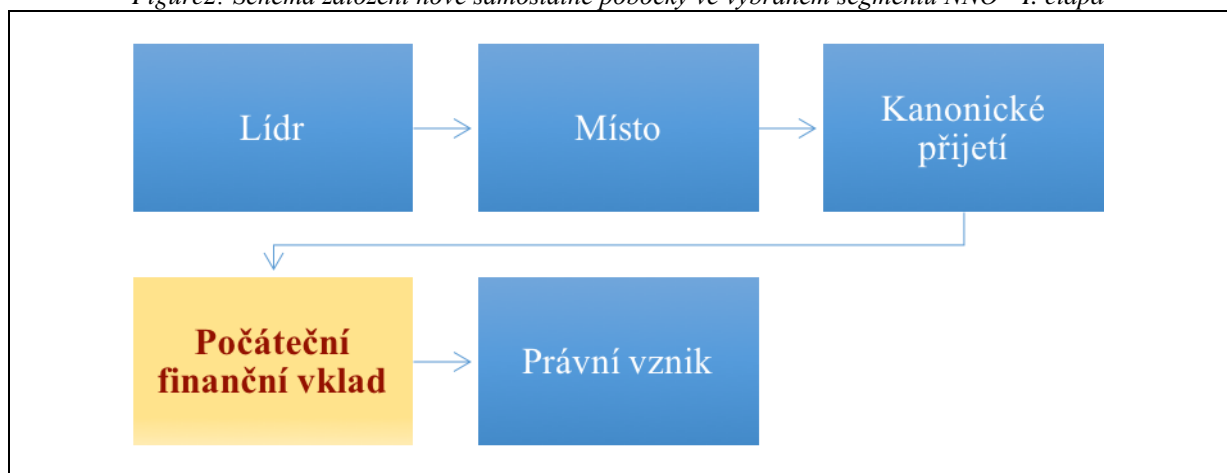
Source: (vlastní zpracování, 2018)

3.2 Druhá etapa – Projekt samostatné pobočky nestátní neziskové organizace

Projekt (pastorační plán) ve vybraném segmentu NNO je založen na specifických principech:

1. Dát život samostatné pobočce.
2. Starat se o lidi a nabídnout jim služby, které souvisí s posláním NNO.
3. Následně přichází řada na hmotnou strukturu samostatné pobočky, tzn. vytváření místa pro službu lidem.
4. Zajištění ekonomických zdrojů, plánování a rozpočet, kontrola využití ekonomických zdrojů a řízení efektivnosti.

Druhá etapa navržené metodiky je rozpracována do návrhu obecného operativního metodologického systému projektu, který předpokládá logické propojení analýzy reality,

identifikace cílů, požadavků, stanovení pořadí priorit, stanovení programu, postup realizace programu, kontrolu a hodnocení výsledků. Obrázek 3 schematicky prezentuje návrh operativního metodologického systému projektu s důrazem na cíle, program a zdroje.

Figure 3: Návrh operativního metodologické systému projektu (v rámci II. etapy)
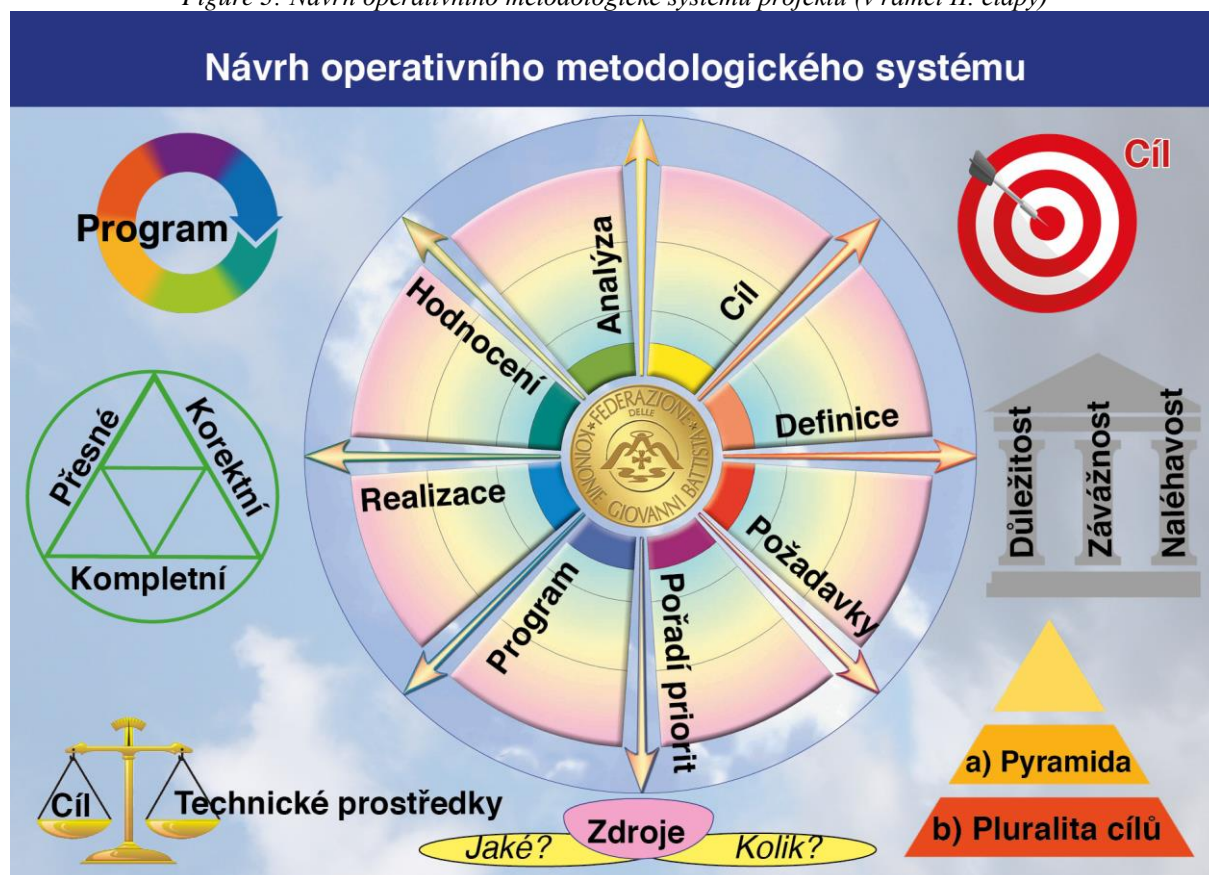
Source: (vlastní zpracování, 2018)

3.3 Třetí etapa - Fáze života samostatné pobočky nestátní neziskové organizace

Třetí etapa navržené metodiky je rozčleněna do čtyř na sebe časově a obsahově navazujících fází života samostatné pobočky NNO.

1. První fází je stav potřeby – NNO potřebuje lidské, materiální a finanční zdroje. Tato fáze může trvat 3–5 let. Prioritou je tvorba lidského potenciálu NNO a hlavním ekonomickým aspektem je finanční pomoc vysílající NNO.
2. Druhá fáze je zajištění vlastního života NNO. Tato fáze předpokládá časovou dimenzi 3–5 let. Prioritou je vytvoření a realizace vlastní vize a poslání. Ekonomický aspekt je zaměřen na finanční zajištění aktivit s následnou finanční samostatností NNO.
3. Ve třetí fázi může samostatná pobočka NNO začít investovat a zabezpečovat nemovitý a movitý majetek. Tato fáze trvá 3–5 let. Prioritou je realizace hmotné struktury NNO v kontextu jejího poslání a zajištění efektivity a dlouhodobé udržitelnosti. Ekonomickým aspektem je tvorba finančních rezerv k plánovaným investicím.
4. Čtvrtou fází je proces multiplikace. Priorita je kladena na multiplikaci nových samostatných poboček NNO. Ekonomický aspekt této fáze života NNO je cílen na

zabezpečení finanční udržitelnosti a tvorbu finančních zdrojů k otevření nové samostatné pobočky.

Ve třetí etapě navržené metodiky - Fáze života samostatné pobočky NNO - je kladen důraz na ekonomické aspekty, které determinují dlouhodobou udržitelnost NNO s následnou multiplikací nové samostatné pobočky NNO. Jedná se o proces, jehož vstupem je primární finanční pomoc vysílající NNO a výstupem dlouhodobá finanční udržitelnost NNO (viz obrázek 4).

Figure 4: Ekonomické aspekty ve čtyřech fázích života samostatné pobočky (v rámci III. etapy)
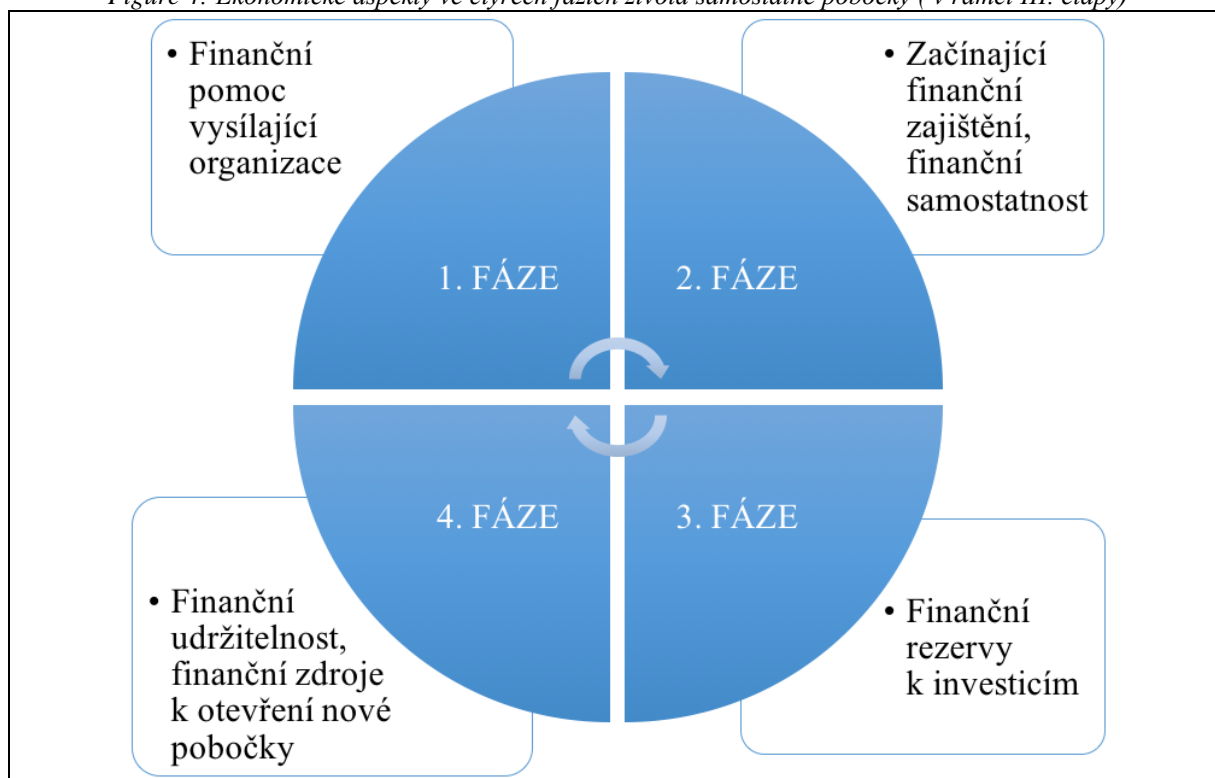
Source: (vlastní zpracování, 2018)

4. Conclusion

Příspěvek prezentuje výsledky kvalitativního a kvantitativního výzkumu v oblasti ekonomického řízení nestátních neziskových organizací se specifickým zaměřením na zlepšení efektivity řízení a na rozvoj systému ekonomického řízení ve vybraném segmentu nestátních neziskových organizací v holistickém pojetí v podmínkách globalizované ekonomiky. Nestátní neziskové organizace nabízejí v globalizované ekonomice alternativní řešení ekonomických, společenských a environmentálních problémů a stále se zvyšují požadavky na rozvoj jejich efektivního řízení s akcentem na ekonomické aspekty a dlouhodobou udržitelnost. Výsledky smíšeného výzkumu prezentují návrh metodiky ekonomického řízení ve vybraném segmentu nestátních neziskových organizací. Návrh metodiky je založen na integraci ekonomických, organizačních, komunikačních a etických specifik a je strukturován do tří navazujících etap životního cyklu nestátní neziskové organizace s rozpracováním druhé etapy navržené metodiky do návrhu operativního metodologického systému projektu. Návrh metodiky byl ověřen na vybraném vzorku

nestátních neziskových organizací v mezinárodním měřítku a výsledky ověření prokázaly funkčnost navržené metodiky a integritu primárně mimoekonomických a následně ekonomických cílů ve vybraném segmentu nestátních neziskových organizací. Prezentovaný návrh metodiky ekonomického řízení je limitován zejména specifickým posláním a oblastí poskytovaných služeb ve vybraném segmentu nestátních neziskových organizací.

Acknowledgment

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IMPORTANCE OF ANALYZING THE DEVELOPMENT OF THE NATIONAL ECONOMY IN THE CONTEXT OF A GLOBAL WORLD

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Abstract. The current global economy, according to some authors defined as a new economy, is characterized as turbulent. Emphasis is placed on generating value added. Of fundamental importance in business relations is information. In order for any market entity, whether household, business or state, to work it has to plan and therefore to predict market developments, with ideally the smallest deviation. The overall setting of the business environment is very complex in today's globalized world. That is why it is very important to measure whether, under the given conditions and in the given environment, it is successful in managing the administration of itself. We can certainly do this by assessing the standard of living of the population, but also through the prediction of GDP. GDP is a very interesting indicator of state success. It can not only indicate past success but also predict the future behavior of the state. The environment of the national economy is very heterogeneous. The aim of the paper is to analyze, on the example of the Czech Republic, the impact of individual branches of the national economy on the development of the national economy as a whole. This is how we described the developments so far and we will be able to predict future GDP developments. For the analysis, GDP data for the economy as a whole and for each sector were used. For time series processing and predictive development tools, artificial neural networks (multilayer perceptron and radial basic function) will be used.

Keywords: prediction, artificial neural networks, GDP, national economy

JEL Classification: C45, E00, E27

1. Introduction

Globalization is a trend of growing interaction between people and societies worldwide, mainly due to advances in technology. Globalization is, in particular, an economic process of integration that has social and cultural aspects. Economically, globalization involves goods and services and the economic resources of capital, technology and data (Mullings, 2018). According to Korney (2017), the global economy, or world economy, is considered an international exchange of goods and services, expressed in money. According to Szymczyk and Kadlubek (2017), the turbulence in the economy represents the economy as an evolutionary process, the economy as a realistic science, and restores history as essential to understanding economic processes. It examines the cycles and fluctuations of economic

history in terms of turbulence in the physical sciences (specifically hydrodynamics) and argues that an evolutionary approach is necessary for a better understanding of historical economic processes (Freeman, 2001). According to Enderle (2009), globalization is an unmistakable phenomenon, and it is absolutely impossible for a company to avoid it. The markets of different countries are opening up and become one of the world's largest markets. This brings a lot of opportunities for companies. A company must be competitive and effective to be successful. Therefore, its performance needs to be increased. There are many methods that can help companies achieve performance gains (Klieštik et al., 2018). One of the most appropriate and most widespread methods is Economic Value Added (EVA). This indicator can help the company significantly increase performance, increasing its value and competitiveness on world markets. EVA, if properly implemented, is becoming a very useful tool to ensure success today (Šalaga, 2016). Jori (2015) states that the development of modern technologies brings more information and, of course, knowledge. Technological progress thus becomes dependent not only on the available volume of information but on the capacity that organizations have to choose, process and transform the form of knowledge and explicit action. Knowledge-based organizations become more than necessary in this way (Crisan and Crisan, 2008). According to Dědina and Šánová (2013), globalization theories contain a contradiction in understanding the essence of "development" in terms of the globalization approach. On the one hand, globalization brings about the destruction of borders, the maximum convergence and the assimilation of systems. At the same time, however, it is the basis for the development of the subject of development (Šuleř, 2017). Market development is a business strategy whereby an enterprise seeks to find new potential customers for its existing products and services. In other words, the goal of market development is to expand to unused markets (Bilan et al., 2017). The overall setting of the business environment is very complex in today's globalized world. That is why it is very important that we can measure whether, under the given conditions and in the given environment, the state is successful in managing the administration. We can certainly do this with the prediction of the Gross Domestic Product (GDP). GDP is one of the most important economic indices, which represents a view of the state economy. Therefore, it is very important to find prognoses and estimates of GDP according to official statistics (Bartoseviciene et al., 2005). According to Vrbka (2016), GDP measures the financial value of the total production of goods and services in a given country for a certain period of time. GDP generates the economic performance of a country or region and is useful for comparing differences in the standard of living of nations. In general, there are three methods for determining GDP on the basis of production, expenditure and revenue. GDP is expressed as the monetary value of all finished goods and services produced in a given time period in one country. GDP is usually calculated annually but can also be calculated quarterly (He, 2009). GDP includes all private and public consumption, investment, government spending, private supplies, construction costs paid, and foreign trade balance. Thus, GDP is determined by the economic performance of the country (Xu, 2004). GDP is therefore a measure of consumer expenditure (C) plus business investment (I) and government spending (G), as well as net exports, which are exports without imports (X-M). The dynamics of the structure of GDP by revenue category reflects a real reduction in household incomes and a growing tax burden (Steblianko, 2016). GDP can be used to explore all the economies of the world. Through GDP, it is also possible to compare different economies with regard to the size of their workforce and available resources. GDP is constantly changing, based on new data on productivity, consumption and investment. Therefore, economists and decision-makers can use GDP to measure the growth

or decline of the economy (Vltavska et al., 2015). Hall (2011) reports that GDP and its calculation, however, bring some drawbacks, among which we can count that it does not take into account the quality of goods or natural disasters.

The aim of the paper is to analyze, on the example of the Czech Republic, the impact of individual branches of the national economy on the development of the national economy.

2. Data and methods

The data was taken from the Czech Statistical Office (ČSÚ, 2018). Methodology for determining GDP by individual methods is specifically mentioned on the website of the Czech Statistical Office (www.czso.cz). In addition, the GDP data for each quarter obtained through the production method will be used in the text. GDP will be at basic prices, ie not adjusted for inflation. The time interval is defined by a series from the 1st quarter of 1995 to the 4th quarter of 2017. This is about 92 records. The calculation will not contain product taxes and product subsidies. We will match production time series of individual institutional sectors. Industry, mining and quarrying will be concentrated under one item. Data statistics by institutional sector were listed. For information on the representation of individual institutional sectors on GDP generation, see Table 1.

Table 1: The share of institutional sectors in GDP formation

NACE	A	B+C+D+E	F	G+H+I	J	K	L	M+N	O+P+Q	R+S+T+U				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1995	3.96%	28.46%	6.88%	18.67%	2.70%	3.03%	5.82%	5.77%	13.14%	2.36%	90.80%	10.53%	1.33%	100.00%
1996	3.62%	29.45%	7.28%	17.91%	3.05%	2.90%	5.54%	5.53%	13.25%	2.16%	90.70%	10.47%	1.17%	100.00%
1997	3.32%	29.25%	6.92%	18.42%	3.69%	2.89%	5.88%	5.35%	13.00%	2.34%	91.05%	10.06%	1.11%	100.00%
1998	3.40%	28.39%	6.77%	18.70%	3.58%	3.65%	6.19%	5.38%	12.79%	2.33%	91.19%	9.64%	0.83%	100.00%
1999	3.12%	27.84%	6.30%	19.31%	3.58%	3.34%	6.73%	5.39%	12.83%	2.32%	90.77%	10.10%	0.87%	100.00%
2000	3.12%	28.07%	5.80%	19.76%	3.83%	2.86%	7.39%	5.33%	12.57%	2.34%	91.07%	9.80%	0.87%	100.00%
2001	3.01%	28.68%	5.61%	19.53%	3.88%	3.03%	7.14%	5.40%	12.70%	2.25%	91.23%	9.50%	0.73%	100.00%
2002	2.56%	27.54%	5.72%	19.54%	4.09%	2.44%	7.22%	6.14%	13.81%	2.34%	91.41%	9.44%	0.86%	100.00%
2003	2.36%	26.74%	5.89%	19.48%	4.24%	3.07%	7.18%	5.86%	14.11%	2.45%	91.38%	9.69%	1.07%	100.00%
2004	2.31%	28.08%	6.00%	18.47%	4.04%	2.99%	7.01%	5.86%	13.41%	2.32%	90.49%	10.48%	0.97%	100.00%
2005	2.21%	28.05%	6.03%	17.98%	4.37%	2.86%	7.24%	5.82%	13.60%	2.22%	90.38%	10.50%	0.88%	100.00%
2006	2.07%	28.90%	5.79%	18.12%	4.57%	2.81%	7.25%	5.77%	13.28%	2.28%	90.84%	10.02%	0.87%	100.00%
2007	1.96%	28.72%	5.88%	17.75%	4.72%	3.29%	7.15%	6.02%	12.83%	2.19%	90.52%	10.30%	0.82%	100.00%
2008	1.94%	28.22%	5.95%	17.34%	4.69%	3.71%	7.57%	6.30%	12.93%	2.04%	90.68%	10.13%	0.82%	100.00%
2009	1.64%	27.16%	6.08%	16.44%	4.81%	4.04%	8.18%	6.20%	13.78%	2.08%	90.43%	10.55%	0.98%	100.00%
2010	1.52%	27.05%	6.21%	16.86%	4.64%	4.27%	8.13%	5.98%	13.71%	2.05%	90.43%	10.80%	1.22%	100.00%
2011	2.15%	27.84%	5.57%	16.42%	4.66%	4.19%	7.93%	5.91%	13.48%	2.10%	90.25%	11.51%	1.75%	100.00%
2012	2.35%	27.90%	5.26%	16.41%	4.59%	4.04%	7.87%	5.84%	13.56%	2.04%	89.87%	11.95%	1.82%	100.00%
2013	2.40%	27.70%	5.15%	16.08%	4.50%	4.17%	7.85%	6.02%	13.65%	2.00%	89.51%	12.37%	1.89%	100.00%
2014	2.47%	29.27%	4.98%	16.10%	4.54%	3.90%	7.74%	5.87%	13.54%	1.98%	90.38%	11.52%	1.89%	100.00%
2015	2.23%	28.94%	5.05%	16.63%	4.62%	3.85%	7.58%	5.91%	13.19%	1.99%	89.99%	11.90%	1.88%	100.00%
2016	2.21%	28.91%	4.91%	16.76%	4.62%	3.80%	7.56%	5.98%	13.23%	1.96%	89.93%	12.08%	2.00%	100.00%
2017	2.19%	28.60%	4.73%	16.84%	4.64%	3.73%	7.67%	6.13%	13.29%	1.94%	89.76%	12.08%	1.84%	100.00%

Note: NACE A is Agriculture, forestry and fishing; B+C+D+E is Manufacturing, mining and quarrying and other industry; F is Construction; G+H+I is Trade, transportation, accommodation and food service; J is Information and communication; K is Financial and insurance activities; L is Real estate activities; M+N is Provessional, scientific, technical and administrative activities; O+P+Q is Public administration, education, health and social work; R+S+T+U is Other service activities. Column number 11 is Gross value added, number 12 Taxes on products, 13 Subsidies on products and column number 14 is Gross domestic product (14=11+12-13).

Source: (Own calculation based on data of the CSO, 2018)

It is clear from the table that the share of institutional sectors in GDP has not changed much over time. Industry, mining and quarrying is the largest share. At best, it is around 28.5%. The second place of the rankings is occupied by trade, transport, accommodation and

hospitality with an average of 17%. It is worth noting the third most important sector – public administration and defense, education, health and social care. It averaged up to 13.5%. The development of agriculture, forestry and fisheries is also interesting. It is undoubtedly the strategic sector of the national economy. In 1995, it reached a share of 3.96%, which then declined to 1.52% in 2010. In 2017, the sector occupied 2.19% of GDP.

Data processing will be done using Statistica software version 12 from Dell. The data mining tool of the neural network will be used. In particular, we will use time series (regressions). For data processing, DELL's Statistica version 12 will be used. The data mining tool of the neural network will be used. In particular, we will use time series (by regression).

We will generate Multilayer Perceptron Networks (MLP) and Neural Networks of Basic Radial Functions (RBF). Time will be the independent variable. We will determine the company's stock price as the dependent variable. We divide the time series into three sets - training, testing, and validation. The first group will be 70% of input data. Based on the training set of data, we generate neural structures. In the remaining two sets of data, we always leave 15% of the input information. Both groups will serve us to verify the reliability of the found neural structure or found model. The delay of the time series will be 1. We will generate 10,000 neural networks. Out of those we will preserve 5 with the best characterististics[6]. In the hidden layer, we will have at least two neurons, at most 20. In the case of the radial core function, at least 21 neurons, at most 30, will be in the hidden layer. For the multilayer perceptron network, we will consider these activation functions in the hidden layer and in the output layer: Linear, Logistic, Atanh, Exponential, Sinus.

Other settings are left by default (ANS – automated neural network). The results, if the outputs are not adequate, can then be corrected by adjusting the weights of individual neurons in the structure using the VNS tool (own neural networks). As soon as we generate neural networks, we will evaluate their validity on an expert basis, not just by statistical characteristics. Ideally, confrontation with the prediction will be sufficient.

3. Results

The results will be shown only for the first institutional sector of the national economy. Similarly, characteristics have been developed for other disciplines, but the scope of this contribution does not allow for the detail of all sectors.

3.1 Agriculture, forestry and fishing

As mentioned above, we consider agriculture, forestry and fishing as a strategic sector of the national economy. It is characterized by specifics such as weather and nature dependence. Its outputs are therefore somewhat poorly predictable. At the same time, it is necessary to recall the state and European support for agriculture in the form of a number of subsidies. This, of course, results from the uniqueness of this sector.

Table 2 provides an overview of generated and preserved neural networks.

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[6] We will be orientate ourselves using the smallest square method. We will terminate network generation if there is no improvement, ie to reduce the sum of squares. Thus, we will preserve those neural structures whose sum of squares of residues to actual gold development will be as low as possible (ideally zero).

Table 2: Overview of preserved neural networks - agriculture, forestry and fishing

Index	Network name	Training perf.	Testing perf.	Validation perf.	Training error	Testing error	Validation error	Training algorithm	Error function	Activ. of hidd. layer	Output activ. funct.
1	RBF 1-13-1	0.214970	0.429403	0.779795	54251928	38123979	53861979	RBFT	Sum of sq.	Gauss	Identity
2	RBF 1-17-1	0.176858	0.725623	0.780270	161003328	36043669	41947882	RBFT	Sum of sq.	Gauss	Identity
3	RBF 1-14-1	0.011021	0.817950	0.804540	130033870	19977698	23477578	RBFT	Sum of sq.	Gauss	Identity
4	RBF 1-13-1	0.130977	0.758868	0.814751	60830341	20081468	60883504	RBFT	Sum of sq.	Gauss	Identity
5	RBF 1-15-1	-0.047489	0.784414	0.893169	194452526	15699310	83705301	RBFT	Sum of sq.	Gauss	Identity

Source: (Authors)

It is clear from the results that better results are generated by neural networks of basic radial functions (using fuzzy logic). All networks were obtained using the RBFT algorithm. The smallest sum of squares was used as the error function. For the activation of neurons in the hidden layer, Gauss curve was used in all cases, then the identity function was used for the activation of the neurons in the output layer. All networks, however, show very little performance in the training set of data, slightly better in the testing set and satisfactory in the validation data set. On the basis of numerical characteristics, we cannot determine the most successful neuron structure. The statistics of alligned time series listed in table 3 can help us.

Table 3: Statistics of alligned time series – Agriculture, Forestry and Fishing

Statistics	Prediction statistics				
	Output (goal): Agriculture, forestry and fishing				
	1.RBF 1-13-1	2.RBF 1-17-1	3.RBF 1-14-1	4.RBF 1-13-1	5.RBF 1-15-1
Minimum prediction (Training)	5711,4	-4038,3	-30220,3	4385,7	-6807,0
Maximum prediction (Training)	37817,4	72081,6	41540,7	29127,8	64558,4
Minimum prediction (Testing)	8210,6	-3219,4	4113,1	5110,9	9491,5
Maximum prediction (Testing)	31589,9	43043,9	38901,0	26881,2	30208,1
Minimum prediction (Validation)	9785,7	201,3	7594,9	619,2	-349,4
Maximum prediction (Validation)	24706,2	54770,1	38459,3	25673,9	63949,7
Minimum residues (Training)	-21774,5	-56652,6	-29937,5	-16929,7	-49170,4
Maximum residues (Training)	26522,6	31979,1	47280,0	27416,9	31890,6
Minimum residues (Testing)	-15507,6	-14463,0	-12586,0	-8001,3	-9099,3
Maximum residues (Testing)	21293,2	23352,5	8463,5	16768,9	14552,1
Minimum residues (Validation)	-3207,4	-14057,1	-7564,4	-2603,2	-23236,7
Maximum residue (Validation)	18410,5	13228,7	12391,3	18221,2	11852,5
Minimum standard residues (Testing)	-3,0	-4,5	-2,6	-2,2	-3,5
Maximum standard residues (Testing)	3,6	2,5	4,1	3,5	2,3
Minimum standard residues (Testing)	-2,5	-2,4	-2,8	-1,8	-2,3
Maximum standard residues (Testing)	3,4	3,9	1,9	3,7	3,7
Minimum standard residues (Validation)	-0,4	-2,2	-1,6	-0,3	-2,5
Maximum standard residues (Validation)	2,5	2,0	2,6	2,3	1,3

Source: (Authors)

Table 3 confirms previous unsatisfactory results. Individual statistics vary significantly between neuron structures, even in percentages. This may be caused by two reasons:
1. Incorrectly subdividing the data set into three subsets – training, testing and validation.
2. The agriculture, forestry and fishing sector is turbulent.

However, we can still assess the difference between individual time series and real sector developments. We will then examine the residuals that arise (Figure 1).

Figure 1: Time series prediction – agriculture, forestry and fishing
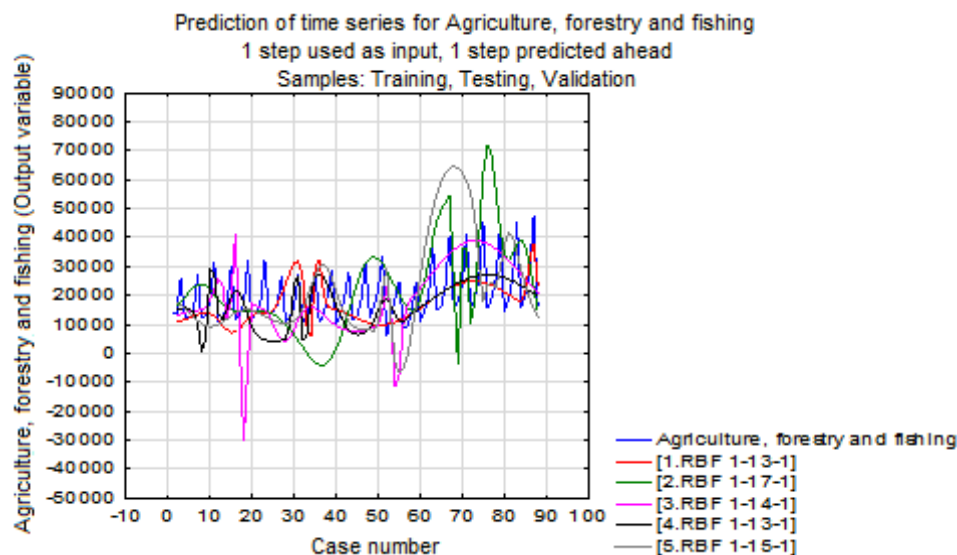
Source: (Authors)

The chart shows seasonal fluctuations in the actual performance of the sector. It is thus a question of whether neural networks are a suitable tool for alligning this time series. For example, the Box-Jenkins method with seasonal fluctuations works. It predicts each season of a seasonal cycle within a different time series and then merges it into one output. Neural networks, however, do not know such a process. If we consider the real sector development and neural networks, we will evaluate the neural structure of RBF 1-13-1, the first neural network, as the most successful.

1,000 generated networks and 5 of the best results, as well as statistics of time series and predictions of time series (residual assessment) were similarly reported for other areas of the national economy - ie for industry, mining and quarrying; construction; trade, transport, accommodation and hospitality; information and communication activities; finance and insurance; real estate activities; professional, scientific, technical and administrative activities; public administration and defense, education, health and social care; other activities.

4. Conclusion

The aim of the paper was to analyze, on the example of the Czech Republic, the influence of individual branches of the national economy on the development of the national economy.

The aim of the paper was fulfilled. For each institutional sector of the national economy, neural structures were created to allign time series. If neural structures show high performance, low error and low residue, they can be used to predict the future development of production of the institutional sector of the national economy. In addition, together with product taxes and the negative value of the subsidy on products, we will affect the development of the whole GDP. In our case, low performance has shown two time series - agriculture, forestry and fishing and construction. Other neural networks showed high

performance: Industry, mining and quarrying, Business, transport, accommodation and hospitality, Information and communication activities, Money and insurance, Real estate activities, Professional, scientific, technical and administrative activities, Public administration and Defense, Education, Health and Welfare and Other Activities. However, despite the high performance it is not suitable to apply the neural networks according to the chosen methodology, because the time series are characterized by relatively high seasonality. Specifically, these are the types of institutional sectors: Business, transport, accommodation and hospitality, Information and communication activities, Professional, scientific, technical and administrative activities and Other activities. At the same time, we have to include two low-performance neural networks, but with a high degree of seasonality: Agriculture, Forestry and Fishing, and Construction.

It is therefore suggested to take seasonal considerations in terms of the time series to divide by quarters and then to calculate for each sector the neural structure for each time series of all quarters separately. Subsequently, the results will be chronologically sorted to get one time series. However, it should be noted that this would be an experiment. Its pitfalls can be seen in a short time series. In each such time series there would be only 23 entries of data (92 of all data entries / 4 quarters per year). However, it is not certain whether the series is sufficient to obtain relevant results.

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METHODOLOGY OF MEASUREMENT OF SOCIO-ECONOMIC DEVELOPMENT IN GLOBALIZATION CONDITIONS - SPATIAL ANALYSIS OF SELECTED CHARACTERISTICS

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Abstract. The aim of the article is to compare the methods of measuring socio-economic development in the European Union member states. The focus was on the Human Development Index (*HDI*), which is the main reference point in the social economy literature. *HDI* is a combination of three basic components of human development: the standard of living, health and education. In the article, the indicator has been extended by two further components. In the article, the author proposes addition of selected demographic variables and the level of development of the labour market to measure the socio-economic development. Therefore, the aim of the article is to introduce a modified *HDI* coefficient considering selected features and to compare this coefficient with measures known from the literature. Based on the research, it can be concluded, that the *HDI* value is strongly positively correlated with selected economic features. There are slight differences between the results depending on the applied research methodology. In addition, the economic activity is not evenly distributed in the geographical space. It is possible to indicate groups of people, wealth and poverty. Analysis of causation and analysis of spatial relationships between economic features is the key to learn about the modern economy. The article consists of two basic parts: a brief discussion on the methodology of analyzes and the results of empirical research.

Keywords: socio-economic development, *HDI* coefficient, labour market, spatial econometrics, globalization

JEL Classification: C33, C34, C44

1. Introduction

The study of the level of socio-economic development of the countries associated in the European Union is an important element of the governance process by the Council of Europe, the European Commission and by the governments of individual countries.

The *HDI* (Human Development Index) is a commonly used indicator of the socio-economic development in the world. The countries associated in the European Union are, according to this indicator, very highly developed or highly developed. Its value is determined on the basis of 3 characteristics: health, education and standard of living indicators. However, you can ask a few questions. First of all, do the characteristics taken into account give a complete, real picture of the socio-economic development of countries and regions? What

variables should be taken into account to more accurately determine the level of development? What variables should be included in the analyzes to forecast socio-economic development?

In the article, the author proposes to add the selected demographic variables and variables indicating the level of development of the labour market to measure socio-economic development. The purpose of the article is to define a modified *HDI* factor taking into account additional characteristics and to compare this coefficient with a standard *HDI* measure.

In numerous works in the field of social sciences, including economics, there are results of research on demographic, socio-economic and labour market analyzes. The most recent among them are: Engineer & King (2013), Gaygisiz (2013), Zambrano (2014), Raab et al. (2008), Stiglitz (2011), Stiglitz (2012), Zeug-Zebro & Miskiewicz-Nawrocka (2017, A), Zeug-Zebro & Miskiewicz-Nawrocka (2017, B), Wolny-Dominiak & Zeug-Zebro (2012), Mastalerz-Kodzis & Pspiech (2016, A), Mastalerz-Kodzis & Pospiech (2016, B), Pospiech & Mastalerz-Kodzis (2016).

The first chapter deals with the methodology of analyzes. It presents the *HDI* meter and proposed its modification. The second chapter is the analysis of data, which concerns selected economic characteristics of the countries associated in the European Union. In the empirical part, the *HDI* index was calculated, the socio-economic indicator was modified, and the relationships between the analyzed values were also examined and conclusions and postulates were made.

2. Methodology

The index of socio-economic development of *HDI* was developed in the 90^s of the XXth century. In the economic and social literature is often described by Bilbao-Ubillos (2013), Pinar et al. (2013), Lockhart & Rencher (1997), Salas-Bourgoin (2014).

2.1 The Standard Human Development Index

HDI is used to determine socio-economic changes in countries around the world. The Human Development Index is a summary measure of achievements in three key dimensions of human development: first - a long and healthy life, second - knowledge and third - a standard of living (www.hdr.undp.org):

- Heath index $H.Ind_i = \dfrac{LE_i - 20}{85 - 20}$, where the variable LE_i is life expectancy at birth (years)

- Education index $E.Ind_i = \frac{1}{2}\left(EXP.Ind_i\right) + \frac{1}{2}\left(ENR.Ind_i\right)$, where the partial index $EXP.Ind_i = \dfrac{EXP_i - 0}{18 - 0}$ is expected years of schooling index and the variable EXP_i is expected years of schooling (years); the partial index $ENR.Ind_i = \dfrac{ENR_i - 0}{15 - 0}$ is the mean years of schooling index and the variable ENR_i is the mean years of schooling (years).

- Income index $Y.Ind_i = \dfrac{\ln(y_i) - \ln(100)}{\ln(75) - \ln(100)}$, where the variable y_i is the gross national income per capita.

The *HDI* is the geometric mean of normalized indices for each of the three dimensions. The indicator of social development per capita for a given country is:

$$HDI_i = \sqrt[3]{H.Ind_i \cdot E.Ind_i \cdot Y.Ind_i} \qquad (1)$$

The size of *HDI* at a given level means a developed country: poorly (0-0.5), medium (0.501-0.8), high (0.801-0.9), very high (0.901-1).

2.2 Modified indicator of socio-economic development

According to the author, the selected characteristics of the labour market and selected demographic indicators should also be taken into account for the analysis of socio-economic development, as the level of development of the labour market determines the level of living to a significant degree, while demographic indicators determine the development of a given region in the perspective of several or even several dozen years. According to the author, the demographic structure of societies and the condition of the labour market - in the long run, have a significant impact on the economy, cause its development or slowdown.

To determine the modified *HDI* coefficient, the variables used in point 2.1 were used, and variables from 2017 were added: labour force participation rate (% ages 15 and older, mean value for male and female) and dependency ratio (young age 0-14 per 100 people ages 15-64). The relationship between several selected characteristics showing the level of development of the labour market, including employment, unemployment and the selection of the variable force participation rate was examined, it was a variable strongly correlated with other variables, therefore it is a good carrier of information on the labour market. Similarly, in the case of demographic characteristics, the relationship between the percentage of people in pre-working, production and post-working age and the variable dependency ratio was examined and found to be strongly correlated. According to the author, the variable dependency ratio is the carrier of the largest information on the demographic state of the European Union's societies.

The new indicator of socio-economic development per capita for a given country was determined according to the formula

$$New\_HDI_i = \sqrt[5]{H.Ind_i \cdot E.Ind_i \cdot Y.Ind_i \cdot L.Ind_i \cdot D.Ind_i} \qquad (2)$$

where:

- $L.Ind_i = \dfrac{LB_i - \min\limits_{i \in N} LB_i}{\max\limits_{i \in N} LB_i - \min\limits_{i \in N} LB_i}$ means the labour market index calculated using the labour force participation rate (LB_i)

- $D.Ind_i = \dfrac{D_i - \min\limits_{i \in N} D_i}{\max\limits_{i \in N} D_i - \min\limits_{i \in N} D_i}$ means the old age index determined for the Di -

  dependency ratio.

3. The results of the analysis

Empirical research was conducted based on the latest economic and demographic data for the years 2015-2017 (www.hdr.undp.org; www.ec.europa.eu/eurostat). Analyzing the dynamics of changes in the *HDI* index for the years 2015-2017 (Table 1, Figure 1), it can be seen that in all countries belonging to the European Union there was a marked increase in this indicator. In 2017 the highest position was Ireland, the lowest value of the indicator was recorded for Romania.

Table 1: HDI index for the years 2015-2017, New_HDI values for 2017 and its components.

Country	HDI (2015)	HDI (2016)	HDI (2017)	New_HDI (2017)	Labour force participation rate/100 (2017)	Dependency ratio/100 (2017)
Ireland	0.929	0.934	0.938	0.699	0.602	0.336
Germany	0.933	0.934	0.936	0.630	0.606	0.200
Sweden	0.929	0.932	0.933	0.681	0.641	0.281
Netherlands	0.926	0.928	0.931	0.665	0.636	0.253
Denmark	0.926	0.928	0.929	0.666	0.632	0.258
United Kingdom	0.918	0.920	0.922	0.671	0.625	0.278
Finland	0.915	0.918	0.920	0.654	0.584	0.263
Belgium	0.913	0.915	0.916	0.642	0.533	0.266
Austria	0.903	0.906	0.908	0.625	0.605	0.211
Luxembourg	0.899	0.903	0.904	0.633	0.579	0.237
France	0.898	0.899	0.901	0.652	0.554	0.291
Slovenia	0.889	0.894	0.896	0.620	0.563	0.227
Spain	0.885	0.889	0.891	0.620	0.580	0.223
Czech Republic	0.882	0.885	0.888	0.629	0.602	0.234
Italia	0.876	0.878	0.880	0.589	0.489	0.213
Malta	0,871	0.875	0.878	0.604	0.545	0.218
Estonia	0.866	0.868	0.871	0.639	0.634	0.255
Greece	0.866	0.868	0.870	0.597	0.531	0.217
Cyprus	0.860	0.867	0.869	0.630	0.628	0.241
Poland	0.855	0.860	0.865	0.603	0.570	0.217
Lithuania	0.852	0.855	0.858	0.613	0.611	0.224
Slovakia	0.851	0.853	0.855	0.608	0.601	0.221
Latvia	0.841	0.844	0.847	0.616	0.613	0.238
Portugal	0.842	0.845	0.847	0.595	0.586	0.210
Hungary	0.834	0.835	0.838	0.588	0.561	0.213
Croatia	0.827	0.828	0.831	0.581	0.516	0.224
Bulgaria	0.807	0.810	0.813	0.576	0.537	0.219
Romania	0.805	0.807	0.811	0.579	0.536	0.228

Source: (own study on the base of data from the UNDP Human Development Report and Eurostat bases)

Figure 1: The values of the HDI Index in 2015-2017.
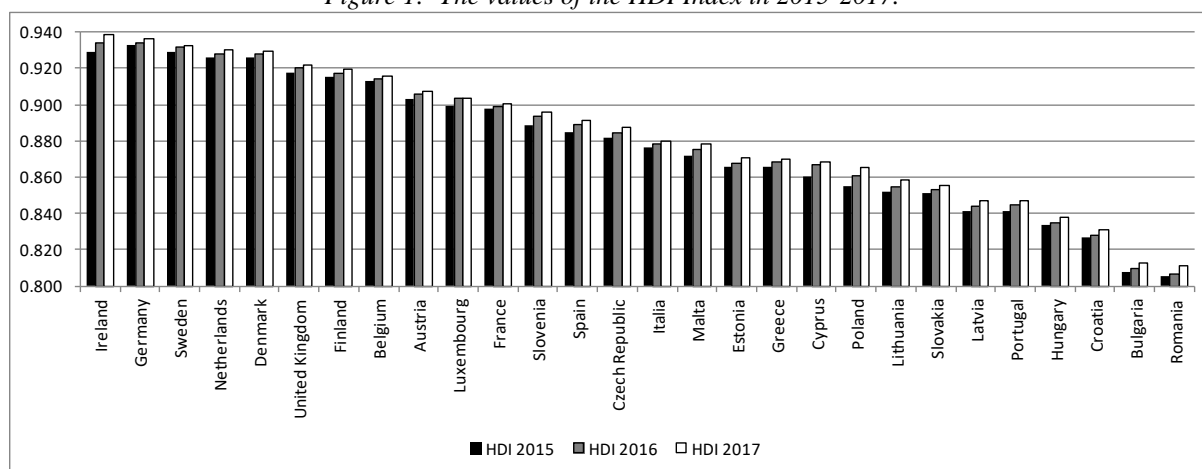
Source: (own study on the base of data from the UNDP Human Development Report)

In determining the minimum and maximum values of *New_HDI* constituent indexes, all countries of the world were taken into account, so for the analyzed 28 EU countries none of the variables assumed a minimum or maximum value, the indexes did not take the value 0. Table 1 and Figure 2 presents *HDI* values and *New_HDI* comparisons for the year 2017 and its components.

Figure 2: Comparison of HDI and New_HDI values.
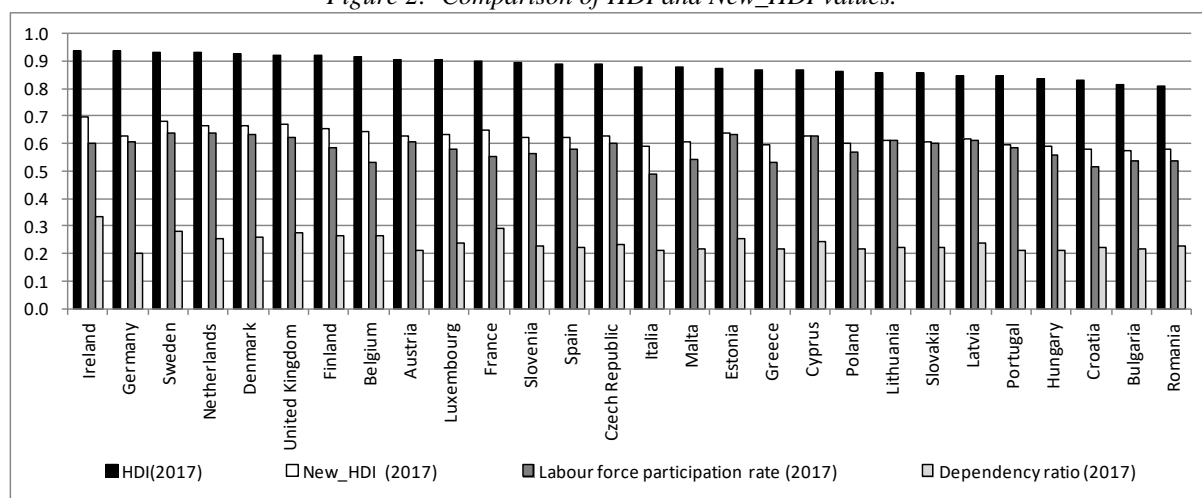
Source: (own study on the base of data from the UNDP Human Development Report and Eurostat bases)

The Pearson correlation coefficient for the European Union countries between *HDI* and *New_HDI* values is 0.868, which indicates a strong positive dependence. The values of the analyzed measures, however, are not identical. The introduction of new variables from the labour market and indications about the demographic state of the EU countries, however, brings some new information. The standard *HDI* count is moderately dependent on new variables: Pearson's coefficients between *New_HDI* and *L.Ind* variable is 0.450, while between *New_HDI* and *D.Ind*, the value is 0.545. Thus, the new variables bring important information to the index. The labour market and demographic status of the population, according to the author, determine to a large extent the socio-economic development, therefore the *New_HDI* meter is noteworthy due to the construction of forecasts for socio-economic development. In addition, the *New_HDI* index depends more on demography

(*D.Ind* variable), the correlation coefficient is 0.833, and to a lesser extent on the labour market condition (*L.Ind* variable), for which the relationship is of the order 0.655. The correlation of the two new indexes of the labour market and demography components was also examined) and it turned out that they show a weak, positive relation at the level of 0.333. Therefore, each of them is the carrier of new information.

4. Conclusion

The construction of a new measure of socio-economic development of countries, but also of smaller territorial units, such as regions, voivodships, communes allows for taking into account additional information on the level of development of the labour market and the territorial demographic status. The inclusion of new information during socio-economic analyzes has given a new measure, according to the author, better suited to forecasting the socio-economic level. Because the higher the values of the changing demographic dependency ratio, the higher the level of labour market development measured, for example, by the variable labour force participation rate, the country has a chance for faster and more balanced social and economic development in the conditions of globalization.

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THE POPULATION LIVING STANDARD IN AGING EUROPE

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Abstract. The demographic changes in the European Union, that have been observed for many years, clearly highlighted the global aging process, which has a huge effect on reproduction, mortality and migration. In an aging society, the population changed expectations regarding the standard of living and the health care system plays an increasing role. Due to the increasing number of elderly population the demand for care services and medical care is increasing, and thus changes in the employment structure, the level of unemployment, income of the population and the way of spending free time.

The main objective of this paper is spatial analysis of the standard of living of the European Union countries population. The application of spatial analysis to investigate this process will allow to establish existing relationships between the studied regions with respect to this phenomenon. To estimate population living standard will use synthetic measure. The analysis took into account the level of unemployment, employment, working conditions, financial resources, population income, economic development, economic and social infrastructure, living conditions, poverty, public security, culture and environmental pollution.

Keywords: population's living standard, population aging, synthetic measure.

JEL Classification: I19, J19, C49

1. Introduction

A complete picture of changes in the number and structure of the population of the EU can be observed on the basis of observations of real growth of population and factors: total fertility rate and gross reproduction, for which a decreasing trend has been evident for many years. In an aging society, the population's living standard especially the health care system plays an important role. Due to the increasing number of elderly population is increasing the demand for care services and medical care, and living conditions, public security, culture and enviromental pollution. Population ageing will tend to lower labour-force participation, savings rates, and a future slowing of economic growth. (Maresova, 2015; Van der Gaag, 2015; Franc, 2016)

In recent years, many socio-economic analyzes have been carried out. Various methods have been used in the study of phenomena depending on location and spatial interactions including demographic processes (eg (Trzpiot & Ojrzynska 2014; Mastalerz-Kodzis & Pospiech, 2016, A; Mastalerz-Kodzis & Pospiech, 2016, B; Trzpiot & Orwat-Acedanska, 2016; Zeug-Zebro and Miskiewicz-Nawrocka, 2017; Rakauskiene & Volodzkiene, 2017; Wawrzyniak, 2016; Warzecha and Wojcik, 2015; Rasticova et al., 2016; Mszynska, 2011).

The aim of the paper is spatial analysis of the standard of living of the European Union countries population. The data was obtained from the Eurostat database.

2. Perkal synthetic measures

The one method of assessing the potential of the studied phenomenon (the level of population's living standard) is a method of Perkal, which based on the construction of synthetic measure m_i. This measure based on the presentation of the variability the group of traits in a set of different objects in one year.

The higher value of the synthetic indicator means better position the object in terms of level of development. The Perkal indicator is estimated as the arithmetic mean of traits x'_{ij} :

$$m_i = \frac{1}{n} \sum_{j=1}^{n} x'_{ij} , \qquad i = 1, 2, ..., n , \qquad (1)$$

where:

n is the number of included features,

x'_{ij} is the standardized value of j - the features for the i - th object,

$$x'_{ij} = \frac{x_{ij} - \bar{x}_j}{S_j} , \qquad \text{when } x_{ij} \text{ is the value of stimulant,} \qquad (2)$$

$$x'_{ij} = -\frac{x_{ij} - \bar{x}_j}{S_j} , \qquad \text{when } x_{ij} \text{ is the value of anti-stimulant,} \qquad (3)$$

x_{ij} is the original value of j - the features for the i - th object,

$\bar{x}_j$ is the arithmetic mean value of j - the features,

S_j is the value of standard deviation of j - the features.

3. The measure of population aging

The most common measures of old age are index of demographic aging and old dependency ratio. The index of demographic aging represents the the ratio of the number of elderly people (population aged 65 and more) to the number of children (population aged 0-14 years). And the old dependency ratio is equal the quotient of the population 65 and over to the population 15 to 64 years. (Cieslak, 1992)

In order to evaluate changes in the process of population aging can be used Długosz indicator (Długosz, 1998):

$$W_{sd} = \left(L_{(0-14)t} - L_{(0-14)t+n} \right) + \left(L_{(>65)t+n} - L_{(>65)t} \right) \qquad (4)$$

where:
$L_{(0-14)t}$ - the share of the population aged 0-14 years at the beginning of the period,

$L_{(0-14)t+n}$ - the share of the population aged 0-14 years at the end of the period,

$L_{(>65)t+n}$ - share of people aged 65 or more at the end of the period,

$L_{(>65)t}$ - share of people aged 65 and over at the beginning of the period.

The index values less than zero mean the rejuvenation of the society, while the higher the positive value of the indicator, the more dynamic the aging of society.

4. Empirical analysis

The object of the study were all EU countries in 2005, 2010 and 2015. The data used in the analysis comes from the Eurostat database. All calculations and maps were made in the statistical program R CRAN and Microsoft Excel.

Analyzing the data contained in Eurostat for the population structure, it can be seen the aging process of the societies of EU countries. The demographic aging index increases in subsequent years in all countries studied and its value is greater than 1 for almost all countries. It means a significant advantage of the number of people aged 65 and over in relation to the number of children (0 - 14 years). The highest value of this index characterized Germany (1.4 – 1.6) and Italy (1.4 – 1.6), next Greece (1.2 – 1.4), Bulgaria (1.3 – 1.4) and Portugal (1.1 – 1.4). The shortest index value was recorded in Ireland (0.5 – 0.6), Cyprus (0.6 – 0.9), Luxembourg (0.8 – 0.9) and Slovakia (0.7 – 0.9).

Observing the old dependency ratio in 2005-2015, it is clear that the most favourable situation is in Ireland, Cyprus, Luxembourg, Poland and Slovakia, where in the study period the index value were equal about 50 % - 60%. The worst situation is in Italy, where this index has decreased by 110% in 2015, next Greece (97%), Germany (96%), Portugal (93%), Finland (94%), Sweden (93%).

Figure 1-2 shows the dynamics of demographic the demographic aging index in EU countries and the old dependency ratio.

Figure 1. The demographic aging index of EU counties
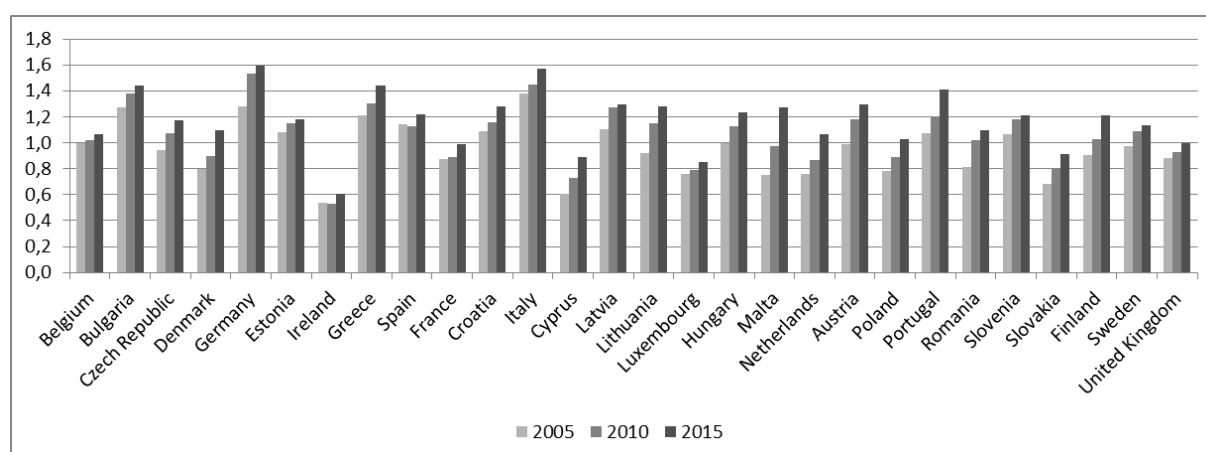
Source: (own elaboration)

Figure 2. The old dependency ratio of EU counties
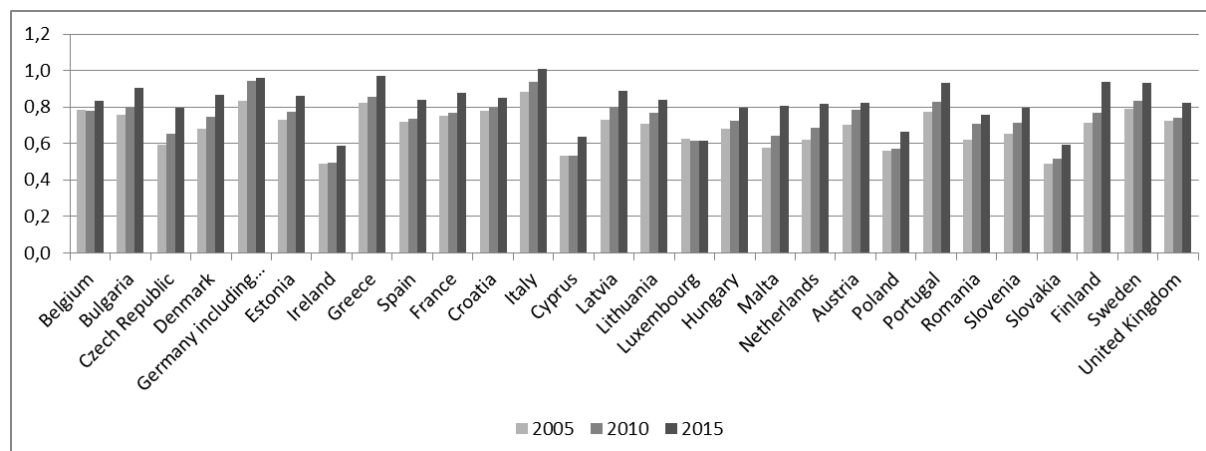
Source: (own elaboration)

Figures 3 shows the dynamics of changes in aging process in EU countries in the period 2000-2015.

Figure 3. The Długosz indicator of EU counties
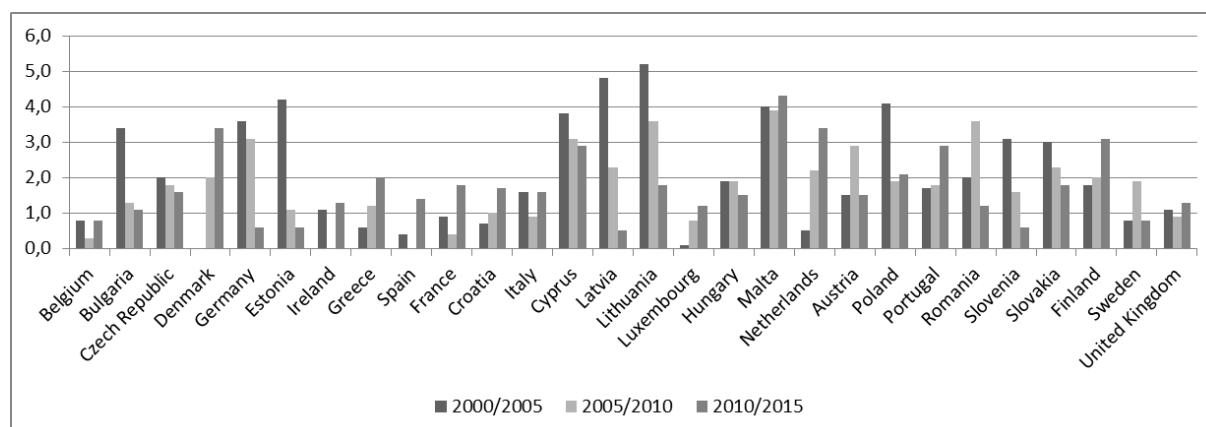
Source: (own elaboration)

The 5-year changes in the Długosz indicator show that there has been a change in the speed of advanced aging of the population (Fig. 3). Positive properties of the indicator for Bulgaria, Czech Republic, Germany, Estonia, Cyprus, Latvia, Lithuania, Hungary, Poland, Slovenia indicate that the development of the aging process is now less dynamic than at the beginning of the study. The Długosz indicator value for Denmark, Greece, Spain, France, Croatia, Luxembourg, Netherlands, Portugal, Finland and United Kingdom show that the development of the aging process is now more dynamic than at the beginning of the study.

In the second stage of the study estimated a Perkal synthetic measure and tidied countries due to the level of the population's living standard. The set of diagnostic features taken into account in the study, assuming division between stimulants (S) and anti-stimulants (D) is following: at-risk-of-poverty rate (D), active population from 15 to 64 years (S), annual unemployment rate (D), available beds in hospitals and available beds in nursing and residential care facilities per 1000 population (S), medical doctors, dentists, nurses and midwives per 1000 population (S), population from 25 to 64 years by educational attainment level: less than primary, primary and lower secondary education (levels 0-2) (D), upper

secondary and post-secondary non-tertiary education (levels 3 and 4) (S), tertiary education (levels 5-8) (S), average household size (S), mean equivalised net income (S) and general government expenditure by function: Public order and safety (S), health (S), social protection (S), education (S), recreation, culture and religion (S). In the next step of study, used a Perkal synthetic measure to ordering EU countries due to the level of the analyzed phenomenon. Table 2 shows the value of the Perkal indicator for EU countries in the years 2005, 2010 and 2015.

Table 1. The Perkal measure of EU countries in years: 2005, 2010 and 2015.

	2005	Ranga	2010	Ranga	2015	Ranga
Belgium	0,2098	22	0,2712	17	0,2500	23
Bulgaria	0,1501	24	0,2366	21	0,2786	18
Czech Republic	0,2924	11	0,3897	8	0,3918	6
Denmark	0,3257	7	0,3093	12	0,3306	9
Germany	1,0296	1	1,1097	1	1,1484	1
Estonia	0,3381	6	0,2968	16	0,3040	12
Ireland	0,2678	15	0,1456	25	0,2830	17
Greece	0,0873	25	0,0958	26	-0,0067	28
Spain	0,2934	10	0,3190	11	0,2769	19
France	0,6874	3	0,7451	2	0,7733	2
Croatia	0,0787	26	0,1820	23	0,1919	24
Italy	0,3660	4	0,4116	6	0,3592	8
Cyprus	0,1663	23	0,2448	20	0,1422	25
Latvia	0,2229	20	0,1560	24	0,2625	22
Lithuania	0,2363	19	0,2212	22	0,2954	15
Luxembourg	0,2691	14	0,3334	10	0,3170	11
Hungary	0,2168	21	0,2643	19	0,2628	21
Malta	-0,0205	28	0,0388	27	0,0944	26
Netherlands	0,3631	5	0,4113	7	0,3706	7
Austria	0,2982	9	0,3017	14	0,3218	10
Poland	0,2711	13	0,4337	4	0,4573	4
Portugal	0,0070	27	0,0237	28	-0,0032	27
Romania	0,2385	18	0,3010	15	0,2831	16
Slovenia	0,2664	16	0,3538	9	0,2755	20
Slovakia	0,3027	8	0,4268	5	0,4202	5
Finland	0,2554	17	0,3040	13	0,2983	13
Sweden	0,2721	12	0,2669	18	0,2980	14
United Kingdom	0,7286	2	0,5722	3	0,5539	3

Source: (own elaboration)

Based on the estimated values of the Perkal indicator it can be concluded, that the best of living conditions of population (first place in the ranking) in all studied years is in Germany, while France ranks second and next position – United Kingdom. The least favorable situation can be noted in the following countries: Portugal, Malta and Greece, which in the analyzed years occupied one of the last three places in the ranking. Estimated value of Perkal measure also shows, that in the studied years most variable rankings were for Poland (coefficient of variation 0.61) and next Estonia, Spain, Slovenia (over 0.3). While the lowest variability in population's living standard was recorded for the countries, that in the analyzed period remained at the same place in the ranking, ie. Germany, Portugal, Malta, Greece, Croatia, Romania and Cyprus. Comparing the data obtained in 2005 and 2015 year it can be observed that over the 10 years the most beneficial changes, ie. the improvement of living standard (much higher in the ranking), occurred in the Poland, Bulgaria and Czech Republic. On the

other hand, the worst deterioration of the situation (much lower ranking) took place in Spain and Estonia.

In the next stage, the total interval of measures variability was divided into four classes, to which countries are assigned according to the following rules: class I (high levels of the studied phenomenon), class II (medium levels of the studied phenomenon), class III (low levels of the studied phenomenon), class IV (very low levels of the studied phenomenon). The results of obtained classes spatial distribution for Europe territorial division into countries in 2000, 2010, 2015 due to the level of population's living standard is shown in the following table (Table 2).

Table 2. The classification of EU countries due to the value of the Perkal measure in years: 2005, 2010 and 2015.

	2005	2010	2015
Class I	Germany, France, United Kingdom	Germany, France, United Kingdom	Germany, France, United Kingdom
Class II	Denmark, Estonia, Italy, Netherlands, Austria, Slovakia	Czech Republic, Italy, Luxembourg, Netherlands, Poland, Slovenia	Czech Republic, Denmark, Italy, Netherlands, Poland, Slovakia
Class III	Belgium, Bulgaria, Czech Republic, Ireland, Greece, Spain, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Poland, Romania, Slovenia, Finland, Sweden	Belgium, Bulgaria, Denmark, Estonia, Ireland, Spain, Croatia, Cyprus, Latvia, Lithuania, Hungary, Austria, Romania, Slovakia, Finland, Sweden	Belgium, Bulgaria, Estonia, Ireland, Spain, Croatia, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Austria, Romania, Slovenia, Finland, Sweden
Class IV	Croatia, Malta, Portugal	Greece, Malta, Portugal	Greece, Malta, Portugal

Source: (own elaboration)

Based on the above table, it can be observed that the level of living condition in EU countries is unchanged. In subsequent years, almost all countries belong to the same groups. The exception is Czech Republic and Poland, which in 2005 belonged to Group III and in 2010 and 2015 to Group II, and Croatia which in 2005 belonged to Group IV and in 2010 and 2015 to Group III. Such a change means improvement of population's living standard in these countries. Moreover, Austria and Estonia belonged to Group II in 2005 and in the next years to Group III, Greece was in Group III in 2005 and in IV Group in 2010 and 2015. Such a change means worsening of living condition in these countries.

Comparing the results obtained above it can be observed that Germany is the only country with the highest values of age and occupies the first place in terms of living conditions. The opposite situation was recorded for Greece, Portugal and Malta, which have the highest age coefficients and occupy the last place due to the living conditions of the population. The estimated Spearman rank correlation coefficient showed a very weak relationship between the aging process of society and the improvement of the living conditions of the population. Values of the estimated Spearman correlation coefficients in Table 3.

Table 3. The Spearman correlation coefficients.

	Perkal measure		
	2005	2010	2015
The demographic aging index	-0,0556	-0,2080	-0,2802
The old dependency ratio	0,0383	-0,1483	-0,0520

Source: (own elaboration)

5. Conclusion

The analysis showed that the most favorable changes in population's living standard concern German residents, which was confirmed in the ranking of EU countries due to the level of living condition. Germany occupies first place in every year. In addition, based on the estimated values of the measure, Greece, Portugal and Malta took the lowest positions in the ranking. Research carried out a very weak relationship between the aging process of society and the improvement of the living conditions of the population in EU countries.

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ENVIRONMENTAL PUBLIC EXPENDITURES ON DIFFERENT GOVERNMENTAL LEVELS

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Abstract. The increasingly visible impacts of long-term environmental pollution have shifted the issue of environmental care to the global level in the 1970s (the first UN International Conference on Human Environment took place in 1972 in Stockholm). Since then the degree of state cooperation in the environmental field has been steadily increasing. Thanks to the process of globalization the creation and protection of the environment has been taking place in the various regions of the world. Although state stimulus for environmental care had supranational character in many countries (including the Slovak Republic), one of the basic principles of the European environmental policy is that of subsidiarity. Its main idea is to transfer environmental competences together with their funding to the lowest government level. This paper examines the extent of environmental care carried out at the supranational, national, regional and especially local levels in the Slovak Republic. The degree of environmental care is expressed by the volume of environmental public expenditures spent at individual government levels in the Slovak Republic. The aim of the paper is to evaluate the attitudes of individuals to public funding of environmental care as one of the elements of the globalization process and to confront them with the actual volume of environmental public expenditures spent at different levels of public administration of the Slovak Republic. In the analysis, we use the data of our own primary research and the official statistical databases of Eurostat and the Statistical Office of the Slovak Republic.

Keywords: environmental public expenditures, subsidiarity principle, public sector, Slovak Republic

JEL Classification: F64, O13, Q56

1. Introduction

During the end of the last millennium the environment gradually became a more important field of observance besides fulfilment of economic and political goals. (Bugri & Pribisova, 2011; Medved et al., 2011) Some authors e.g. Cepelova (2013) and Pearce & Palmer (2007) include it as an autonomous element amongst public sector functions. Similarly, we also attach an exceptional position to the public expenditure arising in its context, which only records the early stage of development in terms of theoretical processing.

Environmental public expenditures are understood as financial means expended by the public sector with the intention to accomplish goals of environmental politics (Hammond et al., 1995), (Arbolino et al., 2018), (Bakaki & Bernauer, 2018), or more precisely public expenditures connected with environment maintenance that originated at any government level. (Gupta et al., 1995) Sauer (2007) also concurs with our definition from the accountancy point of view since he views environmental expenditure as a monetary flow realised in the framework of the environment protection. We point out that OECD defines environmental public expenditures indirectly via a register of environmental activities connected with them and all the other non-mentioned activities that induce other than environmental public expenditures.

Looking at the environmental public expenditure as such and also their part, it is necessary to look at the classification. There are various classifications available in the literature, but we use the public administration classification from the point of view of rating (functional level) divided into local, regional and central. (Sivak et al., 2007; Cepelova 2013)

Expenditure distinction is also affined, based on the distinction between central government and state (federal) budget, regional government and its budget, and local government or administration with its own budget. (Hamernikova & Kubatova, 1999) Finally, there is the so called shared supranational budget comprised of EU member states contribution designated for achievement of certain goals. (Bugri & Pribisova, 2011) This classification has been prioritised since the period of fiscal decentralization, which is considered as a strategy with a more efficient and effective public sector that responds well to the needs and consumer preferences of citizens. (Oates, 2005; Sepulveda & Martinez-Vazquez, 2011) The decentralization itself can improve effectiveness of allocation and subsequent structure of public expenditure (del Granado et al. 2016; Galasso & Ravallion, 2005) and its level is conditioned by economic, demographic and environmental conditions (Arzaghi & Henderson, 2005), although it demands coordination between various government levels (de Mello, 2000). The basic principle that defines decentralization is the subsidiarity principle. It means that assignments of public authorities are administered in close vicinity of the citizens, which can ensure effective goal achievement and achievement of the lowest administration level goals. (Bantus, 2015)

2. Methodology

The paper evaluates individual attitudes towards public funding of environmental care as one of the elements of the globalisation process and confronts them with the real volume of environmental public spending expended at different public administration levels in the Slovak Republic (SR).

To identify individual attitudes a questionnaire survey was conducted. The target population was inhabitants of the SR aged 18 and over. The questionnaire was distributed in electronic and print versions in May 2017. Two hundred and twenty individuals were addressed. The final sample consisted of one hundred and sixty-one respondents (a 73.18% response rate). The sample consisted of 59.6% of women and 40.4% of men. Representatives of Slovak Republics were 18-25 years (65.2%), 26-44 years (19.9%), 45-64 years (13%) and 65+ years old (1.9%). Up to 58.4% of respondents came from the Žilina Region. Other regions of the Slovak Republic (Bratislavský (6,8%), Trnavský (4,3%), Trenčiansky (5%),

Nitriansky (10%), Banskobystrický (7,5%), Prešovský (6,2% 5.6%)) were distributed relatively evenly. Questions were particularly focused on the adequacy of the volume of environmental public spending in the budgets of the following entities: the municipality, the higher territorial unit (HTU) (according to the respondent´s residence for both government levels), the Slovak Republic and the European Union (EU). Questions mostly concentrated on the municipal budget, specifically on the public spending for selected areas of environmental care (e.g. purity of water streams and water areas, care for public greenery, waste management). In view of the absence of scale variables, descriptive statistics, the Mann-Whitney U-test, the Kruskal-Wallis Test and the Wilcoxon Signed Ranks Test were used in the analysis of responses. 5% significance was applied.

The data obtained from primary research were compared to Eurostat and the Statistical Office of the SR information on the volume of the environmental public spending (more accurately public spending that comes under the environmental protection category (in line with Classification of the Functions of Government)) in EUR for a ten-year period (from 2007 to 2016).

3. Results and discussion

The subsidiarity principle requires the management and accomplishment of environmental care at the lowest levels of government. However, about half of the respondents did not observe it in existing Slovak conditions (Figure 1, Table 1). These respondents thought the municipalities were currently the least important in public environmental care (*actual importance*), the HTUs and the state were more important, and the supranational (European) level was dominant level of government in the fight against environmental damage.

If the respondents defined the extent of environmental competencies of each government level (*desired importance*) on their own, statistically significant difference would occur for national and supranational authorities (Table 1). The respondents consistently agreed on the bottom-up method of growing duties and responsibility, from the municipal level to the state level. It means they did not feel the need to apply the subsidiarity principle in the implementation of the state environmental policy of the SR.

Figure 1: The actual and desired importance of four levels of government in environmental care (1 – the least important, 4 – the most important)
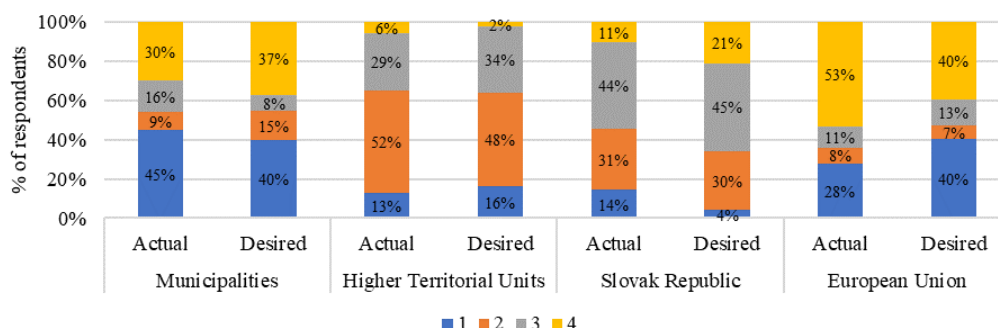
Source: (the authors)

An unclear situation arises at the EU level. While 53% of respondents thought the EU was predominant in the field, only 40% of respondents liked it. At the same time, one additional

response would have relegated the EU to the last place in importance from the environmental care point of view. A possible cause of the discrepancy between its actual and desired importance could be a series of visible changes (e.g. changes in public administration bodies responsible for environmental care, implementation of mandatory waste separation to the municipalities) which the SR had to make before and after the accession to the EU. Based on these, the respondents could judge the EU had the greatest impact among the levels surveyed. Its apparent incidence is demonstrated, for example, by the emphasizing the principle of sustainability (not only in international conventions but also by the EU), that had positively influenced the relationship to the environment of 31 (19%) respondents (a family (23%) and a contact with nature itself (27%) were the only stronger incentives). Naturally, the adopted measures also have their opponents, which could be one of the reasons why the respondents would welcome less significance for the EU.

Table 2: The actual and desired importance of four levels of government in environmental care (1 – the least important, 4 – the most important) – Mode and Wilcoxon test results

Statistics	Act.Ms	Des.Ms	Act.HTUs	Des.HTUs	Act.SR	Des.SR	Act.EU	Des.EU
N	161	161	161	161	161	161	161	161
Mode	1	1	2	2	3	3	4	1
Test Statistics[a]	Act.Ms - Des.Ms		Act.HTUs - Des.HTUs		Act.SR - Des.SR		Act.EU - Des.Eu	
Z	-,799[b]		-,650[c]		-3,636[b]		-2,876[c]	
Asymp. Sig. (2-tailed)	,424		,515		,000		,004	
a. Wilcoxon Signed Ranks Test			*b. Based on negative ranks.*			*c. Based on positive ranks.*		

Source: (the authors)

Note: act. – actual, des. – desired, Ms – Municipalities, HTUs – Higher Territorial Units, SR – Slovak Republic, EU – European Union

Comparable ambiguity of respondents' answers about the EU is also noticeable to the question of the sufficiency of the volume of public spending allocated in the budget of the relevant level of government to provide environmental care. If the answer "unsure" is excluded, the conflicting answers (definitely yes – definitely not and probably yes – probably not) are almost balanced at the EU level (Figure 2). On the contrary, most respondents considered the volume of environmental public spending in the municipal budgets, the budgets of the HTUs and mainly in the national budget insufficient. It is worth mentioning again the high share of "unsure" responses at all four levels which could be a sign of respondents' knowledge gaps (e.g. due to failure to provide information by the responsible authorities), or their disinterest in public budget issues.

Figure 2: Sufficient volume of environmental public spending in government budgets
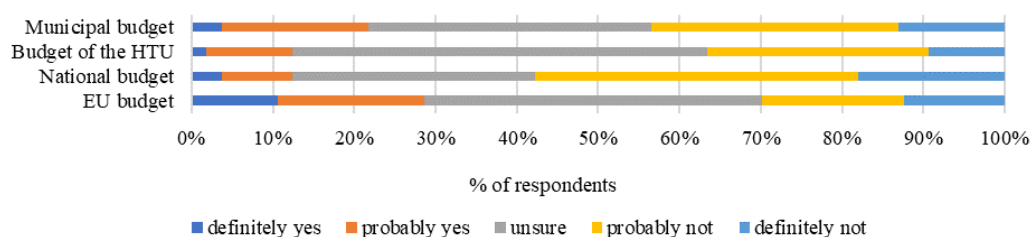
Source: (the authors)

According to respondents, the volume of environmental public spending within the SR was largely perceived insufficient (Figure 2). As it was a problem of every level of government in the SR, it is possible, in keeping with most respondents' answers (Figure 1, Table 1), to

simply assume that the municipal budgets should jointly have the smallest and the national budget the largest volume of environmental public spending. The budgets of the HTUs should be in the middle.

The paradox is the distribution of the real volume of total environmental public spending in the SR from 2007 to 2016 (Figure 3). The premise uttered was confirmed only in three years (2012, 2014, 2015). The absence of environmental public spending of the HTUs and the high share of environmental public spending of the municipalities were not a coincidence. In 2005, fiscal decentralisation was introduced in the SR, when so-called core and transferred competencies of the municipalities and the HTUs were specified. Some environmental activities (e.g. municipal waste management, wastewater drainage, water supply (Act No. 369/1990 Coll.)) were assigned to the municipalities as their core competencies, so the municipalities are responsible for their execution and funding.

Figure 3: Environmental public spending in the Slovak Republic
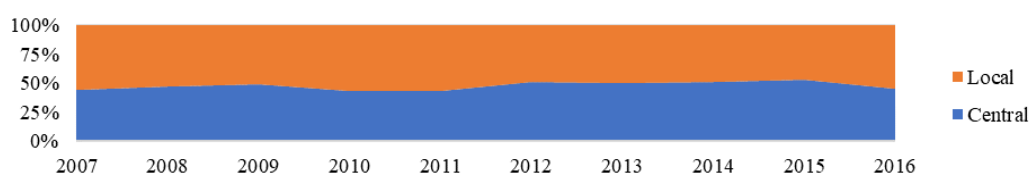
Source: (the authors based on data from the Eurostat database, 2018)

Other environmental activities became the transferred competencies (e.g. nature and landscape protection). The municipalities finance them from the chapters of the national budget. The core competencies of the HTUs do not include any environmental activity. Nevertheless, the HTUs have to participate in the creation and protection of the environment (Act No. 302/2001 Coll.). Potential environmental activity of the HTU could be funded by subsidies provided by the state or the EU. Seeing that the competencies of the municipalities and the HTUs are regulated, the main determinant of the difference between the opinions of most respondents and the real volume of environmental public spending could have been their lack of interest in environmental care.

Table 3: Classification of components of environmental care according to the respondents' satisfaction with funding them by municipalities

Category	Components of environmental care
Very good *(1 – 2)*	Waste bins (1,9), Containers (1,9), Public water supply system (2), Waste collection frequency (2),
Good *(2,1 – 2,4)*	Care for public greenery (2,1), Collection points (2,1), Cleanliness in public areas (2,2), Large capacity containers (2,2), Public sewer system (2,2), Way of handling waste (2,3), Fight with black landfill (2,4)
Bad *(2,5 – 2,9)*	Energy efficient street lighting (2,5), Purity of water streams and areas (2,5), Support for environmental education (2,5), Citizens' involvement in environmental care (2,6), Energy management (2,6), Providing environmental information (2,6), State of local roads (2,7), Support for local producers (e.g. farmers) (2,9)
Very bad *(3 – 4)*	Energy efficient heat and hot water production (3), Energy efficient public transport (3,2), Electric vehicle infrastructure (3,4)

Source: (the authors)

Note: Coding 1(definitely yes) to 4 (definitely not) is applied. Items are divided into four categories pursuant to the weighted arithmetic mean (in brackets).

The questionnaire was aimed at environmental public spending of the municipalities in detail. As found, the respondents considered it inadequate and would welcome its increase

(Figure 2). A similar result is observed in the overall assessment of respondents' views on the (sufficient) funding of specific environmental care components carried out by their municipalities. According to the responses (response "unsure" is excluded), these could be classified into four categories (Table 2).

The respondents positively evaluated particularly the funding of environmental care components associated with waste management. In fact, the municipalities extended the long-term the highest share of their environmental public spending for waste management (Figure 4). The success of these items in comparison with others is therefore not a surprise. Reversely, selected areas of waste management left behind could be an indicator of inefficient use of financial resources.

Figure 4: Environmental public spending of Slovak municipalities
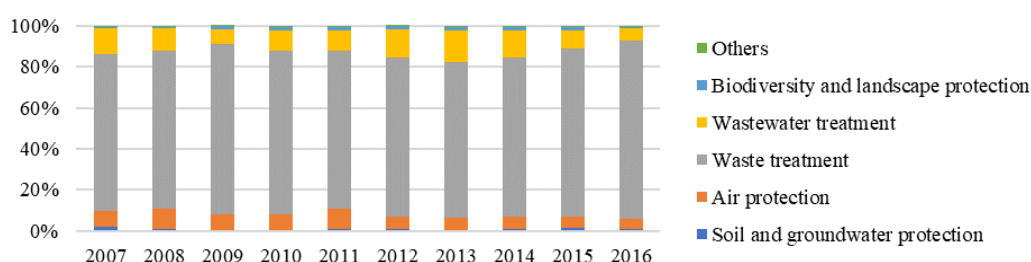
Source: (the authors based on data from the Statistical Office of the Slovak Republi, 2018)

Many of the more criticized components of environmental care (Table 2) are much more difficult to finance (e.g. electric vehicle infrastructure). Types of environmental public spending, which relate to them, are environmental investments. Declining share of environmental investments of total environmental public spending of the municipalities since 2012 (excluding 2015) is not a pre-requisite of improving the actual status in the future (Figure 5).

Figure 5: Environmental public spending of Slovak municipalities (sorted by time)
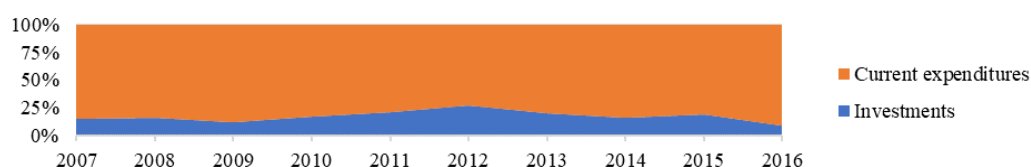
Source: (the authors based on data from the Statistical Office of the Slovak Republic, 2018)

Although there was no statistically significant difference in the respondents' relationship to the environment due to their gender (Mann-Whitney U-test), age, level of education, type of municipality, where the respondent lives, and income (Kruskal-Wallis test), we believe that the public sector should (not only) financially support environmental education. The respondents' answers showed that 62 (39%) respondents were not led to environmental protection until they were 15 years old. Moreover, the lack of environmental education of respondents could be one of the causes of the high number of "unsure" responses or the discrepancy between the perceived position of levels of government by respondents and actual environmental public spending we mentioned. A relevant future research could confirm or reject this assumption. Building a positive relationship with the environment (preferably at an early age) could help any level of government save money on environmental care, or at least increase the efficiency of spending it.

4. Conclusion

Environmental pollution is one of the best-known global problems, drawing commitment from more than a hundred countries and several international institutions. However, even lower government levels are also a part of the solution. Their environment maintenance participation emerges from the subsidiarity principle. Depending on the compliance extent of this principle by the environmental state politics subjects an amount of environmental activities ensured on corresponding government levels changes. Environmental public expenditures are the indices of measure for the public environment maintenance. The circumstances in Slovakia were explored in this article.

The results bring us to a conclusion that the subsidiarity principle application in Slovakia was neither felt nor desired by the respondents. The difference between the assumptions about the expended environmental expenditures and reality supports this argument because respondents view counties as more significant than municipalities, even though since 2005 municipalities are outright responsible for certain environmental actions (as defined by the law). These facts also acknowledge the trend of globalization through perception and preference of higher government levels before the lower. There are numerous reasons why. Respondents show no interest in this topic, there is an insufficient amount of information from various levels of government (especially municipalities), or non-effective expenditure of municipality resources (citizens do not perceive positive environment intervention effects of municipalities).

When considering the sufficiency of financing of the individual environmental care areas in municipalities, there is a consistency with the secondary data dominated by waste management, positively evaluated by respondents, as being adequately funded. On the other hand, there are areas that require additional investments even though they are not priorities for the municipalities, which influenced answers of respondents. These areas are often covered by a higher level of government on a regional, national or supranational level, which affirms the significance of globalisation on environmental issues.

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GLOBALIZATION TRENDS AND THEIR IMPACT ON ECONOMIC AND SOCIAL ASPECTS OF HOUSING

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Abstract. Global problems are increasingly being discussed with the process of globalization. Measures, which have begun to be carried out for reduction of the negative effects of modern society on the environment, are increasingly affecting the building of family houses. The minimization of the exhaustion of natural non-renewable resources, the maximization of recycling, the reduction of greenhouse gases emissions as the reduction of waste generation is an effort of these changes. The use of natural materials can be therefore one of the possible ways of the sustainability achieving. It is necessary to take into account that sustainability do not include only environmental, but also economic and social aspects and these have a direct impact on society well-being. The aim of the submitted contribution is to point out the economic and social factors that significantly affect the quality of housing, the new construction of homes, as well as the living conditions of the population around the world. The specification of the main housing problems of the present is the outcome of a comprehensive evaluation of the economic and social aspects of housing. The article deals with the social and regional aspects of housing and its quality, with the possibility to obtain or rent a home in the context of current market situation and with sociological evaluation of living conditions. It is expected, that a comprehensive view on the housing issue will help evaluate the situation in the context of new housing questions and specify strategic trends and solutions to these problems.

Keywords: global problems, housing, social and economic factors, sustainability

JEL Classification: D14, D19, D31, O39, Q01

1. Introduction

V súčasnosti je globalizácia, ako sa zhodujú autori Vavrova (2015) a Hajdukova et al. (2014), procesom, ktorý rôznou intenzitou zasahuje do všetkých oblastí ľudskej činnosti na celom svete. Predstavuje prirodzený a nevyhnutný priebeh vývoja celej spoločnosti. Aj napriek tomu ju niektorí pokladajú za pokrok, iní zase zdôrazňujú jej negatívne dôsledky. Globálne otepľovanie je jedným z hlavných problémov dnešnej modernej doby. Najmä

v posledných 25-tich rokoch sa na globálnom otepľovaní v značnej miere podieľala činnosť človeka. Z uvedeného dôvodu sa oveľa väčší dôraz začal klásť na ochranu životného prostredia. Táto problematika sa premietla aj do stavebného inžinierstva. Podľa výskumov autorov Zimmer et al. (2017) a Rhee (2018) budovy v Európe produkujú 36 % všetkých emisií oxidu uhličitého. Práve tento objav sa stal dôvodom, prečo sa začali v posledných 10-tich rokoch stupňovať požiadavky na výstavbu všetkých budov, rodinné domy nevynímajúc. Zahraniční autori Cooper (2006), Jansen (2014) a Cruz Noia (2015) zdôrazňujú, že na celom svete sa rozvinulo veľké množstvo stavebných materiálov, systémov a technológií, ktoré súvisia s problematikou udržateľnosti. Zároveň boli vyvinuté výskumy týkajúce sa inovácií za predpokladu ekologických charakteristík týchto materiálov, systémov a technológii. Na druhej strane, o sociálno-ekonomickej otázke udržateľnosti a jej vplyve na bývanie sa diskutovalo len málo. Je nutné brať do úvahy, že trvalá udržateľnosť a teda vyššie nároky na výstavbu, zahŕňajú nielen environmentálne, ale aj hospodárske, ekonomické a sociálne aspekty, ktoré majú vplyv na blaho spoločnosti. Cieľom predloženého príspevku je poukázať na ekonomické a sociálne faktory, ktoré významne ovplyvňujú kvalitu bývania, novú výstavbu rodinných domov ako aj životné podmienky obyvateľstva vo svete.

2. Materiál a metodika

Neoddeliteľnou súčasťou ľudských dejín je úsilie zlepšovať svoje životné podmienky prostredníctvom zdokonaľovania techniky, technológii a tým dosahovať vyššiu kvalitu života (Penalta Catalan, 2016). Masová spotreba bola sprevádzaná (a stále je) aj nebezpečným trendom, ktorý ohrozuje rovnováhu zdrojov ľudskej existencie a trvalo udržateľný vývoj na zemi. Súčasne od deväťdesiatich rokov minulého storočia nastúpili aj globalizačné a antiglobalizačné trendy a konfliktné vzťahy, v kontexte ktorých sú sociálny fenomén, sociálne nerovnosti a sociálna diferenciácia súčasťou nášho života. To však nie je všetko. Kočner et al. (2015), Pohl (2018), Touceda et al. (2018) upozorňujú, že moderné technológie, masová výroba a znečisťovanie životného prostredia sa stali ďalším dôležitým problémom, ktorý bol pomenovaný globálne otepľovanie. V snahe zastaviť a následne znížiť negatívny vplyv na životné prostredie, prichádzajú z národného aj medzinárodného prostredia tendencie na eliminovanie týchto škodlivých vplyvov prostredníctvom smerníc, vyhlášok, nariadení či zmien právnych predpisov. Príkladom môže byť Európska únia (EÚ). Environmentálne normy EÚ patria medzi najprepracovanejšie vo svete. V súvislosti so zmenou klímy EÚ vymedzuje a vykonáva opatrenia a stratégie v oblasti klímy a zastáva vedúcu úlohu počas medzinárodných rokovaní o klíme. Európska komisia navrhla rámec politík EÚ v oblasti zmeny klímy a energetiky na rok 2020. Ako uvádza Pohl (2018), v rámci politiky EÚ v oblasti zmeny klímy a energetiky boli stanovené záväzné ciele, ktoré majú členské štáty EÚ dosiahnuť do roku 2020. Ide o zníženie emisií skleníkových plynov najmenej o 20 % (v porovnaní s úrovňami v roku 1990), zvýšenie podielu spotreby energie z obnoviteľných zdrojov o 20 % a zníženie spotreby primárnej energie o 20 % (v porovnaní s prognózou) prostredníctvom zlepšenia energetickej efektívnosti.

Existujúce ciele, ktoré sa snaží dosiahnuť EÚ sa premietli do zákonov, vyhlášok a nariadení všetkých členských štátov, Slovensko nevynímajúc. Nakoľko autori Zimmer et al. (2017) a Rhee (2018) upozorňujú, že budovy vytvárajú až 36 % emisií v EÚ, stali sa kľúčovou oblasťou pre prijatie opatrení. Prvé opatrenia sa vzťahovali na štátne budovy a podnikateľské subjekty, ale v súčasnosti už stavebné zákony, vyhlášky a iné právne

nariadenia významným spôsobom ovplyvňujú aj výstavbu rodinných domov. Snaha členských
štátov EÚ minimalizovať prevádzkovú energiu budov (energia potrebná na vykurovanie,
chladenie, osvetlenie, atď.) pomáha znižovať negatívny vplyv na životné prostredie. Na
druhej strane zvyšuje investičné náklady na výstavbu vlastného bývania, čo je v kontraste
s ďalším globálnym problémom – chudobou.

Kvalitu života výrazne ovplyvňujú sociálne nerovnosti. Všetky svetové kultúry sa
vyznačujú určitým stupňom tejto nerovnosti. Keď postavíme systém sociálnych nerovností do
hierarchie skupín, hovoríme o tzv. stratifikácii, čo je usporiadanie celých skupín ľudí, ktorí
opakovane dosahujú rozdielne ekonomické domény a rozdielny prístup k moci v spoločnosti.
Tieto rozdiely potom ovplyvňujú spôsob, akým sociálne nerovnosti prechádzajú z generácie
na generáciu, a tak dochádza k vzniku skupín ľudí začlenených do určitej spoločenskej
hierarchie. Sociálnou nerovnosťou sa zaoberali viacerí teoretici od Marxa cez Webera po
Sheofera, Wilsona, Brauna, Bergera a Sena (De Lotto, 2008).

Trhové ekonomiky, podľa Vavrovej (2014) a Klementovej et al. (2015), vytvárajú
nerovnosti veľmi výrazne. Vyplýva to z nízkeho príjmu, nedostatku zamestnania, neexistencie
majetku, ale aj z rozdielnych schopností, úsilia, odlišných investícií do vzdelania a pod. Do
istej miery sú však nutné, aby stimulovali investície, prácu, inovácie a ekonomický rast.

Ani jedna spoločnosť nie je schopná zabezpečiť rovnosť príležitostí, i keď nie všetky sú to
ochotné priznať. Pokus o homogenizáciu v netrhovej a direktívnej ekonomike neuspel. Každá
spoločnosť bola, je a zrejme aj bude diferencovaná do vrstiev a skupín, ktoré sa líšia svojím
podielom na majetku a službách, prístupom k moci a výškou svojej prestíže. Skúškou
demokracie nie je to, ako si počínajú krajiny, ktoré už žijú v akom takom blahobyte.
Demokracia sa ako princíp v skutočnosti overí až vtedy, keď má fungovať v chudobných
krajinách (Mateju, 1977; Zhao et al,. 2012; Jansen, 2014).

Avšak Cooper (2006) a De Lotto (2008) zdôrazňujú, že dôležitým prvkom je aj kultúra.
Kultúrne motívy sa prenášajú z generácie na generáciu, preto kultúra obsahuje duchovné
a materiálne motívy spoločenského života, ktoré ovplyvňujú kultúrnu identitu jednotlivcov a
aj celých komunít. Kultúra je ohniskom sociálnych vzťahov a životného štýlu ľudí. Kultúrne
aspekty môžu byť sprostredkovateľom pocitov, myšlienok a zvyklosti či činnosti typické pre
jednotlivé kultúry. Kultúra je vždy definovaná ako najdôležitejší faktor života ľudí v mestách
aj na vidieku a kultúrne zmeny sa dotýkajú celých spoločenstiev. Spoločnosť Bourdieu (1930
- 2002) definovala kultúru ako kapitál, ktorý má schopnosť sa prenášať medzi generáciami.

2.1 Metodika

Pre zostavenie príspevku bolo nutné prácu rozdeliť do troch kľúčových etáp. *V prvej
etape riešenia* bolo potrebné na základe *analýzy sekundárnych zdrojov* realizovať *literárnu
rešerš,* s cieľom definovať teoretické východiská skúmanej problematiky. *V druhej etape* bola
pozornosť venovaná trvalej udržateľnosti a zelenej ekonomiky, ale najmä vybraným
štatistickým údajom o sociálnych a ekonomických aspektoch bývania ľudí v súčasnej
meniacej sa spoločnosti. V týchto etapách boli použité metódy vedeckej práce, ako
sumarizácia, syntéza poznatkov a metóda analógie. V záverečnej etape pomocou analógie,
dedukcie a sumarizácie poznatkov boli zhodnotené dosiahnuté výsledky a sformulované
závery.

3. Výsledky a diskusia

Ako uvádzajú Kočner et al. (2015), dlhodobá udržateľnosť je dôležitou otázkou v každej krajine na svete. Pre zachovanie ekologickej a ekonomickej rovnováhy využívania prírodných zdrojov sa začína presadzovať zelená ekonomika. Avšak ako zdôrazňuje Cruz Noia (2015), definícia udržateľnosti má viacrozmerný charakter, v rámci ktorého by sa mali vypracovať hospodárske, environmentálne a sociálne otázky, aby sa zabezpečilo lepšie pochopenie kontextu. Väčšina výskumov uskutočnených v tejto oblasti sa týkalo len dvoch rozmerov, ekonomického a environmentálneho. Sociálna otázka je neustále podceňovaná v súvislosti s touto problematikou.

Výsledky výskumov zahraničných autorov Penalta Catalan (2016) a Zimmer et al. (2017) dokazujú, že je dôležitý systémový pohľad a hľadanie nového cyklického konceptu, ktorý spochybňuje ten pôvodný, tzn. „od kolísky po hrob" a naznačuje používanie pojmu „kolíska na kolísku". Zároveň však je nutné zvážiť existujúce premenné v rôznych kontextoch ako napr. sú rozvinuté a rozvojové krajiny. Indexy, ciele a požiadavky na udržateľnosť sú odlišné, ako napr. vzory výroby a spotreby severných krajín (Nórsko, Fínsko, Švédsko) sú vnímané ako želaný ideál pre celý ľudský život na Zemi. Ale nie všetci sme rovnakí, nemáme rovnaké vlastnosti – sme preto potenciálne rozdielny v našich potrebách, snoch a túžbach.

Udržateľnosť teda možno považovať za rovnováhu a trvalo udržateľný rozvoj je spôsob, ako ju dosiahnuť. V tejto logike možno definovať trvalo udržateľnú, resp. zelenú výstavbu ako holistický proces, ktorý sa snaží obnoviť a udržať súlad medzi prirodzeným a vybudovaným prostredným a vytvoriť prostredie, ktoré potvrdzuje ľudskú dôstojnosť a podporuje ekonomickú rovnosť. Zelená (trvalo udržateľná) výstavba tak hľadá rovnováhu medzi troma konceptami s cieľom maximalizovať priaznivé sociálne a ekonomické efekty a minimalizovať negatívne environmentálne vplyvy (Zimmer et al., 2017; Pohl, 2018).

3.1 Sociálne a ekonomické aspekty bývania

Potreba bývania je ovplyvnená hlavne demografickými zmenami, ale aj zmenami spoločenskými, ktoré determinujú populačnú klímu a viacerými spôsobmi ovplyvňujú celkový charakter domácností. Možno tu zaradiť udalosti z histórie, ktoré znamenali výrazné úbytky obyvateľstva (napr. epidémie či vojnové konflikty), ale aj obdobia s populačnými opatreniami, ktoré spôsobili tzv. populačné vlny. Okrem pôrodnosti, potrebu bývania ovplyvňujú aj iné významné demografické charakteristiky, napr. počet sobášov či rozvodov. Rast potreby bývania je v posledných rokoch vyvolaný najmä zmenou spôsobu života – rastie počet jednočlenných domácností. V minulosti aj na Slovensku existovali najmä viacgeneračné domácnosti, v súčasnosti sa tento trend mení. Podľa dostupných údajov, dôvodom znižovania počtu viacgeneračných domácností je atomizácia alebo znižovanie priemerného počtu členov domácností (Jansen, 2011; Eurostat, 2017).

Z dôvodu zväčšovania sa medzery medzi bohatými a chudobnými sa neustále zhoršuje otázka bývania a rapídnym tempom narastá počet ľudí bez domova. Vo svojej správe na to upozorňuje Európska federácia národných organizácií spolu s francúzskou bytovou charitatívnou organizáciou Fondation Abbé Pierre. Správa zdôrazňuje „alarmujúce dôkazy o zvyšovaní bezdomovstva" a vyzýva členské štáty EÚ, aby v centre svojich programov sociálnej politiky postavili odstránenie bezdomovstva (Touceda et al., 2018).

Ako uvádza Eurostat (2017), v roku 2015 žili v EÚ ľudia predovšetkým v bytoch (42 %), takmer jedna štvrtina (24,1 %) v dvojdomoch a jedna tretina (33,3 %) v samostatných domoch. Viac ako štvrtina obyvateľov (26,9 %) obyvateľov EÚ bývalo vo vlastnom bývaní, ktoré však bolo zaťažené pôžičkou alebo hypotékou, čo môže ohrozovať ich bývanie. Obyvatelia Švédska (63,4 %) a Holandska (60,1 %) mali nesplatené pôžičky alebo hypotéky, ktorými zaťažili vlastné bývanie. Podobný trend bol aj na Islande (62,8 %) a v Nórsku (61,9 %). Na druhej strane, pozitívne možno hodnotiť skutočnosť, že až 42,5 % obyvateľov EÚ žilo v roku 2015 vo vlastnom obydlí, ktoré nebolo zaťažené pôžičkou ani hypotékou. V podnájme žilo 19,7 % obyvateľov EÚ, ktorí platili plnú cenu nájmu. Zníženú cenu nájomného platilo 10,9 % obyvateľov, resp. mali ubytovanie poskytnuté bezplatne. Zarážajúce však je, že v celej EÚ je bez domova viac ako 4 milióny obyvateľov, pričom budov, ktoré sú vyľudnené a v súčasnosti sa nepoužívajú je až 11 miliónov.

Okrem hodnotenia či ľudia vôbec majú kde bývať, je dôležité hodnotiť aj samotnú kvalitu bývania. Kľúčovou otázkou posudzovania kvality bývania je dostupnosť dostatočného priestoru v dome alebo byte. V roku 2015 v preplnených obydliach žilo 16,7 % obyvateľov EÚ. Najvyššia miera preplnenia obydlí spomedzi členských štátov EÚ bola zaznamenaná v Rumunsku (49,7 %) a Poľsku (43,4 %). Naopak najnižšia miera preplnenia obydlí bola na Cypre (1,4 %), v Belgicku (1,6 %), v Holandsku (3,3 %), Írsku (3,4 %) a na Malte (3,5 %). U obyvateľov ohrozených chudobou v EÚ v roku 2015 miera preplnenia obydlí bola 29,5 %. Najvyššia miera preplnenia obydlí medzi obyvateľmi ohrozenými chudobou bola zaregistrovaná v Maďarsku (62 %), Rumunsku (61,7 %), Poľsku (59,7 %) a na Slovensku (57,6 %). Kvalitu bývania možno posudzovať aj podľa aspektov deprivácie v oblasti bývania, ako je napr. chýbajúca kúpeľňa, toaleta, zatekajúca strecha alebo obydlie považované za príliš tmavé. V štyroch členských štátoch EÚ viac ako jedna osoba z desiatich čelila v roku 2015 závažnej deprivácii v oblasti bývania. V Bulharsku bola miera deprivácie 11,4 %, v Maďarsku a Lotyšsku sa podiel zvýšil na 15,5 % a v Rumunsku išlo približne o jednu z piatich osôb (19,8 %). Oproti tomu v Holandsku, Belgicku, Fínsku a na Cypre čelilo závažnej deprivácii v oblasti bývania menej ako 1 % obyvateľov (Eurostat, 2017).

Výdavky domácností na bývanie výrazne narastajú. V roku 2015 žilo 11,3 % obyvateľov EÚ v domácnostiach, ktoré minuli 40 % (alebo aj viac) svojho ekvivalentného disponibilného príjmu na bývanie. Podiel obyvateľov, ktorých náklady na bývanie boli vyššie ako 40 % ich ekvivalentného disponibilného príjmu, bol najvyšší u nájomcov s nájomným za trhovú cenu (27 % obyvateľov EÚ) a najnižší u osôb v obydliach obývaných vlastníkom bez zaťaženia pôžičkou alebo hypotékou (6,7 % obyvateľov EÚ) (Eurostat, 2017).

Priemer EÚ zastiera významné rozdiely medzi členskými štátmi. Na jednej strane bolo viacero krajín, v ktorých pomerne nízky podiel obyvateľov žilo v domácnostiach, v ktorých náklady na bývanie prekročili 40 % ich disponibilného príjmu, a to Malta (1,1 %), Cyprus (3,9 %), Írsko (4,6 %) a Fínsko (4,9 %). Na druhej strane, minuli viac ako 40 % svojho ekvivalentného disponibilného príjmu na bývanie len o niečo viac ako dve z každých piatich osôb (40,9 %) v Grécku a niečo menej ako jeden zo šiestich obyvateľov Rumunska (15,9 %), Nemecka (15,6 %) a Dánska (15,1 %) (Eurostat, 2017).

Pri otázke bývania, EÚ nemá nijakú zodpovednosť pretože národné vlády si pripravujú svoje vlastné bytové politiky. Mnohé členské štáty EÚ však riešia podobné problémy, napr. ako obnoviť bytový fond, ako plánovať a obmedziť rozrastanie miest, ako podporovať udržateľný rozvoj, ako pomáhať mladým a znevýhodneným skupinám dostať sa na trh

s nehnuteľnosťami alebo ako podporovať energetickú efektívnosť medzi vlastníkmi domov. Národné vlády poskytujú svojim obyvateľom podporu na bývanie v rôznej forme. Najčastejšia je finančná podpora, či už výhodnejšie pôžičky pri výstavbe, dotácie na výstavbu ekologických domov alebo podpora nízkopríjmových rodín a iné. Zároveň sa jednotlivé členské štáty zaviazali aktívne riešiť problém bezdomovstva. Feantsa tvrdí, že nástroje potrebné na riešenie výziev vylúčenia bývania a bezdomovstva v Európe už existujú. Na európskej úrovni sa aktívne angažujú partnerstvá, ktoré združujú rôzne subjekty: miestne, regionálne a národné vlády, mimovládne organizácie, kolektívy občianskej spoločnosti a európske finančné inštitúcie - zamerané na podporu prístupného bývania pre všetkých. Nástroje, ktoré zriadila Európska komisia, ako napríklad Mestská agenda pre EÚ alebo Európsky pilier sociálnych práv, môžu pôsobiť ako ochrancovia pri uplatňovaní práva na bývanie (Penalta Catalan, 2016; Eurostat, 2017).

Vo Fínsku sa dlhodobé programy na zníženie počtu bezdomovcov za posledných 20 rokov osvedčili tým, že sa sústredili na poskytovanie trvalého a cenovo dostupného bývania a poskytovali špecializovanú podporu najzraniteľnejším osobám, ako je napríklad režim bývania, ktorý dáva ľuďom bez domova stabilné ubytovanie. Zatiaľ čo ostatné členské štáty sa zaviazali k tejto ceste je jasné, že európske stimuly sú potrebné na to, aby sa tieto osvedčené riešenia problému bezdomovstva a bývania viac osvedčili (Penalta Catalan, 2016).

Z vyššie uvedeného vyplýva, že je nevyhnutné udržiavať rovnováhu medzi požiadavkami a možnosťami. Nesmie dochádzať k riešenie jednej otázky potlačovaním druhej. Ako sa zhodujú autori Zhao et al. (2012), Cruz Noia (2015) a Penalta Catalan (2016), priemysel má dôležitú sociálno-ekonomickú úlohu, akonáhle môže vo všetkých svojich aspektoch posilniť sociálnu udržateľnosť. Stavebný priemysel, najmä z dôvodu jeho pracovnej náročnosti je príležitosťou na zmiernenie chudoby. Stavebný priemysel je najväčším priemyselným zamestnávateľom na svete. Poskytuje prácu 111 miliónom zamestnancov (vo svete), z ktorých 74 % je v krajinách s nízkymi príjmami – krajiny s vyššími príjmami produkujú len 23 % celosvetovej výstavby, tzn. je jasné, že „intenzita zamestnanosti" v stavebníctve je oveľa vyššia v krajinách s nižšími príjmami, než v krajinách kde sú príjmy vyššie. V tomto zmysle môže byť vplyv na miestne komunity dosť významný, pričom hlavný sociálny dosah je nepochybne na pracovnej sile. Stavebný priemysel ponúka zamestnanosť pre veľké množstvo najchudobnejších ľudí na svete.

Medzi základné požiadavky, ako uvádzajú Zimmer et al. (2017) a Rhee (2018, na stavby, rodinné domy nevynímajúc, ktoré uvádzajú Nariadenia Európskeho parlamentu a rady č. 305/2011, zaraďujeme už aj energetickú hospodárnosť budov. Normy začínajú rozoznávať typy domov podľa ročných spotrieb energie (energeticky úsporný dom, nízkoenergetický, pasívny, dom s nulovou spotrebou energie atď.). Zároveň sa do popredia dostávajú prírodné stavebné materiály, hlavne drevo. Len malá pozornosť sa venuje skutočnosti, že s rastom nárokov, ktoré sú kladené na súčasné domy (stavby), priamoúmerne rastú aj investičné náklady na výstavbu domu. Pozornosť sa venuje hlavne rozvoju technológii, ktoré povedú k minimalizácii negatívneho vplyvu na životné prostredie (kde patria aj narastajúce nároky na výstavbu), či propagovaniu environmentálnych zdrojov, ktoré je možné používať, ale len malá pozornosť sa podľa Touceda et al. (2018) venuje ekonomicko-sociálnym aspektom bývania. Výstavba rodinného domu je považovaná za najväčšiu investíciu, ktorú priemerná rodina dokáže zrealizovať. Ekonomické odlišnosti, ako zdôrazňuje Penalta Catalan (2016), je možné vidieť nielen medzi jednotlivými krajinami, ale aj regiónmi v jednej krajiny. Sú to hlavne odlišnosti v ekonomickej aktivite obyvateľov v jednotlivých krajoch (zamestnanosť,

vek pracujúcich, pracovná pozícia) alebo v základných makroekonomických ukazovateľoch v krajoch či regiónoch (napr. plat jednotlivca, príjem a výdavky domácnosti). Príjmové nerovnosti, ako uvádza Cruz Noia (2015), ktoré existujú, výrazne ovplyvňujú možnosti obyvateľstva. Zo zvyšovaním požiadaviek, ktoré musia novostavby splniť je teda otázne, či ľudia budú mať v prvom rade dostatok peňažných prostriedkov na stavbu domu, ktorý bude spĺňať všetky predpísané kritériá, ale zároveň aj na uživenie seba a svojej rodiny. Okrem toho je možné konštatovať, že istým spôsobom dochádza k potláčaniu hodnôt, ktoré ľudia vyznávajú (Cooper, 2006). Preto sa autori Zhao et al. (2012); Cruz Noisa (2015), Pohl (2018) a Touceda et al. (2018) zhodujú, že je nutné zobrať na vedomie, že trvalá udržateľnosť má tri aspekty. Okrem ekologických charakteristík, je nutné zohľadňovať aj ekonomické a sociálne aspekty, ktoré výrazne ovplyvňujú možnosti a preferencie obyvateľov.

4. Conclusion

Globalizačné procesy menia spoločnosť vo všetkých jej základných sférach, v ekonomike, sociálnych vzťahoch i duševnom živote. Pozitívne sa prelínajú s novými problémami a neduhmi. Synergickým vyjadrením týchto procesov je zmena kvality života spoločnosti, jednotlivých jej segmentov, a to najmä prostredníctvom štrukturálnych zmien v národnom hospodárstve, zmien sociálnej skladby populácie, technologického boomu a hodnotového systému. Ich výsledkom je prudká diferenciácia a sociálne nerovnosti, ktoré sú v predtým výrazne homogenizovanej spoločnosti prijímané rozporuplne. Pri snahe o ochranu životného prostredia a teda pri trvalej udržateľnosti je nutné zohľadňovať nie len environmentálne, ale aj hospodárske, ekonomické a sociálne aspekty, ktoré majú vplyv na blaho spoločnosti. Zároveň však je nutné zohľadniť kultúrne a historické hodnoty, ktoré sa prenášajú z generácie na generáciu. Iba komplexným riešením môžu byť zmiernené negatívne dôsledky modernej spoločnosti.

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SPECIAL FEATURES OF FAMILY BUSINESS IN THE CONTEXT OF GLOBALIZATION

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Abstract. Globalization is generally understood as the worldwide process of increasing international connectivity in all areas, particularly in the economy, politics, culture, and communication observed in recent decades. The extreme interpretation of this process is often referred to expert literature as an advanced capitalism that worships local traditions and regional differences and creates a homogenized world culture. Globalization is inseparably linked to the creation of a business environment, which is only paid attention in Slovakia since the creation of the market economy in the context of the change of social establishment in 1989. Family and family business represent two intermingling and mutually affecting worlds. In each of them, there are values and principles that make up the family and form a business. Family businesses should help the stability and economic independence of families and increase the attractiveness of the business environment. Creating a favourable business environment with particular emphasis on family business is generally the most powerful engine of any economy with multiple benefits. Additionally, the right marketing application helps to promote this business. The business process as well as the family business are much more developed in Western countries, helped by a favourable political situation, but also for centuries of ongoing and evolving entrepreneurship. The aim of the paper is to examine selected aspects of family business in selected countries, with particular emphasis on current conditions in the Slovak Republic in the context of globalization. The issue of family business is generally in the field of family law and commercial law. However, the research is a multidisciplinary issue with significant transitions to economics, management and marketing.

Keywords: Business code, globalization, family business

JEL Classification: K2, K12, K15

1. Introduction

Rodina a rodinné podnikanie predstavujú dva prelínajúce a navzájom sa ovplyvňujúce svety. V každom z nich existujú hodnoty a princípy, ktoré tvoria rodinu a formujú podnikanie. Rodinný život podnikateľa, jeho osobnosť a záujmy sú často jeho hnacou silou v podnikaní. Napriek tomu sa nezriedka stretávame so situáciou, keď podnikanie ohrozuje rodinu, ale aj so

situáciou, keď rodina ohrozuje podnikanie. Problematika podnikania formou malých alebo stredných rodinných podnikov je v podmienkach Slovenskej republiky stále aktuálna. Diskusie prebiehajú viacerých úrovniach, najmä však v rovine politickej a ekonomickej. Je všeobecne známe, že bez pomoci štátu nie sú rodinné podniky schopné konkurovať nadnárodným obchodným spoločnostiam. K svojmu prežitiu potrebujú primeranú pomoc, ktorá však zo strany štátu neprichádza. V minulosti sme postrehli snahy o zakotvenie inštitútu „rodinného podnikania" do právneho poriadku SR ako novej formy podnikania. Žiaľ išlo však len o neúspešné návrhy. Rozvoju rodinného podnikania tiež nepomáha absencia zníženie odvodov za zamestnancov v rodinných podnikoch.

Keďže skúmanie podmienok rodinného podnikania je na okraji záujmu právnej teórie, majú autori záujem vyplniť túto medzeru. Cieľ príspevku je možné dosiahnuť s využitím odbornej literatúry oblasti ekonómie, manažmentu, marketingu, obchodného práva, správneho práva ako aj právnych predpisov. S využitím vybraných metód skúmania medzi ktoré patrí analýza, deskripcia, dedukcia, doktrinálny a vedecký výklad chceme potvrdiť alebo zamietnuť hypotézu nutnosti prijatia definície pojmov rodinné podnikanie, rodinný podnik a rodinný podnikateľ. Ďalším cieľom príspevku je zmapovať vybrané problémy rodinného podnikania vo viacerých krajinách ako aj v Slovenskej republike a navrhnúť možné spôsoby odstránenia vybraných nedostatkov.

2. Ekonomicko – teoretické vymedzenie vybraných pojmov

Podľa niektorých manažérskych teoretikov (Holienka et al., 2013) môžeme podnikateľa definovať ako osobu, ktorá dokáže riskovať, je pripravená na podnikateľskú činnosť a spĺňa šesť nasledovných znakov úspechu:
1. Ochota tvrdšie pracovať – neplatí forma pevného pracovného času, podnik je u neho na prvom mieste.
2. Vyžiť zo svojich príjmov a ušetriť – podnik sa dá založiť aj pomocou úveru, ktorý ale treba splácať.
3. Zmysel pre zodpovednosť – ak má človek sklony robiť si starosti pre maličkosti, nemá si zakladať podnik
4. Mať osobitnú schopnosť alebo vidieť príležitosť podnikať – len s mimoriadnou výkonnosťou sa možno presadiť tak, aby nestratili svoj kapitál.
5. Ovládať umenie získavať si zákazníkov – vedieť ako predávať svoje výrobky a popritom zdržať ceny, vedieť komunikovať so zákazníkmi, vedieť ich vyhľadať a udržať si ich v podniku.
6. Mať schopnosť alebo danosť dosahovať zisk - každý kto samostatne podniká, stojí alebo padá so svojou schopnosťou dosahovať zisk.

Rodinný podnik ďalej definuje ako podnikateľský subjekt vo vlastníctve jedného alebo viacerých členov rodiny, ktorí vykonávajú zároveň aj funkciu manažmentu. Vlastníctvo ako aj manažment sú v rukách rodiny. Významnou súčasťou malých a stredných podnikov sú rodinné podniky, ktoré súvisia s inštitúciou rodiny a manželstva. Úloha rodinných podnikov vystupuje do popredia predovšetkým v súčasnosti v čase potreby a snahy čeliť konkurencii. Pritom nemôžeme konštatovať, že rodinné podniky patria vždy iba ku skupine malých a stredných podnikov. Výsledky výskumov (Aronoff et al., 2014) dokazujú, že v USA viac ako jedna tretina všetkých podnikateľských subjektov je považovaná za rodinný podnik.ň

Rodinné podniky nie je možné definovať iba podľa veľkosti a na tento účel je treba zvoliť kritériá, ktoré sa používajú vo všeobecnosti, napríklad počet zamestnancov. Nie je možné ani definovať rodinné podniky podľa vlastníctva. Je teda nutné vytvoriť definíciu podľa špecifických kritérií a úloh, ktoré tieto podniky plnia.

Na definovanie rodinného podniku z hľadiska ekonómie môžeme použiť stanoviská, ktoré boli prijaté Massachusetts Mutual Company v roku 1997. Táto spoločnosť uskutočnila výskum, amerických rodinných podnikov. Pre účely výskumu bol rodinný podnik definovaný ako podnik, ktorý spĺňal aspoň jedno z nasledujúcich kritérií:

- majiteľ považuje svoj podnik za rodinný podnik,
- majiteľ má v úmysle odovzdať svoj podnik blízkemu príbuznému,
- okrem majiteľa pracuje ako riadny zamestnanec iný člen rodiny, ktorý je súčasťou každodenného riadiaceho procesu podniku (Zocchi, 2009).

Vo všeobecnosti sú rodinné podniky ťažko definovateľné, vykazujú však určité znaky ako napr. dlhodobá perspektíva aj pre členov rodiny nezaradených do podnikania, obchodné meno podniku je vybrané podľa mena zakladateľa (marketingový znak). Osobitné miesto patrí využívaniu osobných schopnosti členov rodiny začlenených do podnikania. Okrem toho sa stanovujú ciele pre budúce generácie.

2.1 Generačná výmena v rodinných podnikoch a marketing

Budúcnosť rodinných podnikov býva zásadne určovaná úspešnosťou procesov nástupníctva v týchto podnikoch. V profesijnej dráhe manažéra a majiteľa súčasne, býva generačná výmena jednou z najdôležitejších rozhodnutí. Paškrtová (2016) uvádza, že v rokoch rokov 2015 až 2018 čelí približne 135 000 nemeckých rodinných podnikov a od úspešnosti tohto procesu tak bude závisieť až dva milióny pracovných miest. To každoročne predstavuje 27 000 prevzatí. Nie vždy sa majiteľom podarí nájsť vhodného nasledovníka. Vtedy je potrebné sa rozhodnúť medzi predajom rodinného podniku alebo nájsť nasledovníka mimo rodiny. Podľa nášho názoru je však vhodné z marketingového hľadiska pri nerodinnom nasledovníkovi ponechať obchodné meno rodinného podniku (pokiaľ je to meno a priezvisko zakladateľa/majiteľa). Toto rozhodnutie je legislatívne prípustné a má veľký význam predovšetkým z pohľadu nielen medzinárodného ponímania už dlhšie existujúceho rodinného podniku a jeho internacionálne perspektívy (Muegler, 2005).

Rodinné podniky v Taliansku predstavujú až 90% z celkového počtu podnikov v krajine. Pri tomto čísle si treba uvedomiť, že rodina je v Taliansku na prvom mieste a je vysoko cenená. Druhý faktor ovplyvňujúci toto číslo je patriarchálna spoločnosť a súdržnosť rodiny. V krajine sa podniká rodinným spôsobom v každom odvetví ako aj remesle, pričom pôvodným cieľom bolo zabezpečenie rodiny. Legislatívne je táto otázka ošetrená v Zákone o práci a Občianskom zákonníku, ktorý myslí aj na menšie podniky. Taliansky právny poriadok okrem iného definuje malopodnikateľa ako priameho obhospodarovateľa pozemku, remeselníka alebo malého obchodníka, ktorý vykonáva profesionálnu a organizovanú činnosť prevažne vlastnou prácou alebo s pomocou ďalších členov rodiny (Trelova & Olsavsky, 2017). Z uvedenej definície vyplýva, že taliansky malopodnikateľ vykonáva určité činnosť za pomoci ostatných riadne zamestnaných členov rodiny. Osobitne taliansky právny systém definuje aj podnik medzi manželmi, ktorý je založený na princípe riadenia podniku oboma manželmi a patrí do bezpodielového spoluvlastníctva manželov (Zocchi, 2008).

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2.2 Vplyv marketingu na propagáciu rodinného podniku

Pôsobenie ako aj prežitie rodinných podnikov na trhu závisí nielen od kvality realizovanej produkcie alebo poskytovaných služieb ale aj od schopnosti danej organizácie získať si alebo udržať svojím produktom zákazníkov. Na tento účel využívajú rodinné podniky marketing definovaný ako odbytovo orientované systematicky plánované realizovanie a koordinovanie všetkých podnikateľských opatrení s cieľom dosiahnutia zisku respektíve zvýšenia tržieb. Odborná literatúra (Vilcekova & Sarchon, 2018) marketing z globálneho hľadiska chápe aj ako spoločenský a riadiaci proces, v ktorom jednotlivci ako aj skupiny získavajú prostredníctvom vytvárania a výmeny produktov to, čo potrebujú a chcú. Rozhodnutie zákazníka rodinného podniku obstarať si daný produkt závisí od siedmych faktorov:

1. Kvalita produktu.
2. Konkurenčná cena produktu.
3. Vhodná geografická poloha.
4. Propagácia produktu.
5. efektívna komunikácia s verejnosťou.
6. Obraz a tradícia rodinného podniku.
7. Interkultúrne pôsobenie v medzinárodnom priestore.

Uskutočňovať marketingové aktivity znamená pre rodinný podnik aj efektívnu marketingovú komunikáciu. Komunikácia aj na globálnej úrovni pomáha podniku ďalej rásť a expandovať na zahraničné trhy. Predpokladom úspešného uplatnenia marketingu v rodinných podnikoch je dôsledné podriadenie podniku potrebám, predstavám, požiadavkám zákazníkov a spotrebiteľom, marketingová aktualizácia, sústavný výskum trhu, sledovanie a aplikovanie inovácií v prospech spotrebiteľa aj v internacionálnom význame, rovnocenne postavený cieľ tvorby zisku ako i uspokojovanie potrieb zákazníka, dôkladná marketingová komunikácia produktu zákazníkovi, neustále pozitívne budovanie imidžu rodiny, vyhýbanie sa škandálom a nekalým praktikám (Davidekova et al., 2017).

2.3 Bariéry v rodinnom podnikaní

Rodinné podniky majú viacero predností, ale aj mnoho problémov, medzi ktoré patrí negatívne vnímanie podnikateľov, keďže médiá uverejňujú menej pozitívnych príkladov a viac negatívnych čím podnikateľom vytvárajú negatívny imidž. Sťažený prístup k cudzím zdrojom financovania, najmä úverom čoraz viac trápi rodinné podniky. Problematické je aj vzdelávanie v oblasti podnikania. Odborná verejnosť ako aj podnikatelia už dlhodobo apelujú na to, aby sa tejto otázke venovalo vo vzdelávacom procese viac času a priestoru. S tým je spojená potreba navýšenia výdavkov do výskumu a vývoja inovačných technológii vrátane kontroly efektívnosti vynakladania prostriedkov. Administratívna záťaž predstavuje pre malé a stredné podniky ako aj rodinné podniky jednu z hlavných prekážok v podnikaní. Okrem toho apelujú na nedostatočný prístup k informáciám, neustále sa meniace podnikateľské prostredie a nedostupnosť informácií (Bajzikova et al., 2016).

Malé a stredné podniky sú najcitlivejšie na zmeny v podnikateľskom prostredí, majú obmedzený prístup k zákazkám kde sa vyžadujú veľké investície, môžu byť ohrozované nadnárodnými spoločnosťami alebo veľkými podnikmi, nemôžu si dovoliť zamestnať špičkových vedcov, manažérov, odborníkov. V neposlednom rade nie sú schopní monitorovať dostupné zdroje.

2.4 Klady a zápory rodinných podnikov

Forma rodinného podnikania má svoje špecifiká. Pred začatím podnikania touto formou, odporúčame zvážiť viacero skutočností, najmä otázku zvládnutia krízových situácii. Nevýhody rodinného podnikania nie je možné niekedy odstrániť, ale s využitím prevencie ich môžeme eliminovať. Medzi výhody rodinného podnikania však môžeme zaradiť kvalitnejšiu forma spolupráce, väčšiu dôveryhodnosť na pracovisku ako aj ako v povedomí zákazníkov, ľahšie získanie počiatočného kapitálu alebo kapitálu na rozšírenie činnosti, flexibilný pracovný čas, súdržnosť rodiny najmä v ťažkých časoch, ako aj neformálne vzťahy na pracovisku.

Pri negatívach rodinného podnikania môžeme poukázať na možnosť prenosu pracovných problémov do rodiny a naopak, absencia presných pravidiel čo má za následok vznik šumu v podniku, závisť a rivalita medzi členmi rodiny, duálnosť príkazov, konflikty medzi generáciami, či obavy a možné problémy s nástupníctvom. Základný problém rodinného podnikania však vidíme v dosadzovaní rodinného príslušníka na pracovné miesto, ktoré malo byť obsadené kvalifikovanejším zamestnancom (Bajzik, 2016).

2.5 Rodinné podnikanie v Slovenskej republike

Obchodný zákonník ako lex generalis obchodného práva vo svojich úvodných ustanoveniach obsahuje definície troch kľúčových pojmov. Ide o podnikanie, podnik a podnikateľa. Pojem podnikanie však definuje Živnostenský zákon. Odborná literatúra (Kubicek et al., 2006) tvrdí, že vzájomný vzťah právneho režimu Obchodného zákonníka a živnostenského zákona je možné vyjadriť slovami, že každá živnosť je podnikaním, ale nie každé podnikanie je živnosťou. Živnostenský zákon vo svojom ustanovení § 2 pojem živnosť definuje ako „sústavná činnosť prevádzkovaná samostatne, vo vlastnom mene, na vlastnú zodpovednosť, za účelom dosiahnutia zisku a za podmienok ustanovených týmto zákonom." Ide o pojem takmer identický s definíciou podnikania obsiahnutou v Obchodnom zákonníku, podľa ktorého sa podnikaním sa rozumie sústavná činnosť, vykonávaná samostatne podnikateľom vo vlastnom mene a na vlastnú zodpovednosť, za účelom dosiahnutia zisku. Na základe uvedených definícii vykazuje podnikanie päť znakov, ktoré musia byť splnené spoločne (kumulatívne), aby išlo o podnikanie či už podľa Obchodného zákonníka alebo podľa živnostenského zákona (Oveckova et al., 2017).

Prvým znakom je sústavnosť, ktorá ako kritérium podnikania je splnená aj vykonávaním určitej činnosti iba počas určitého obdobia napr. predaj zmrzliny, pričom je dôležité, aby úmyslom podnikateľa bolo vykonávať túto činnosť opakovane. Samostatnosť ako druhé kritérium pri výkone podnikateľskej činnosti treba vykladať v tom zmysle, že podnikateľ sám rozhoduje o spôsobe a formách svojej činnosti, nie je viazaný príkazmi tretích osôb (Vrabko et al., 2012). Tretie kritérium „vo vlastnom mene" znamená, že podnikateľ nekoná v mene iného. Podnikateľskú činnosť však nemusí vykonávať osobne, môže ju vykonávať aj prostredníctvom tretej osoby, napr. prokuristu. Vlastná zodpovednosť je ďalším charakteristickým znakom, ktorý je splnený vtedy, keď za konanie podnikateľa nenesie zodpovednosť nikto iný, ale iba samotný podnikateľ. Dosiahnutie zisku ako posledný znak podnikania je jeho hlavný účel, pre ktorý podnikateľ podniká; nezáleží však či bol zisk skutočne dosiahnutý, dôležitý je jeho zámer zisk vyprodukovať (Wojcak & Barath, 2017).

Podľa Obchodného zákonníka je podnikateľ osoba zapísaná v obchodnom registri; najčastejšie ide o obchodné spoločnosti. Ďalej je podnikateľom osoba, ktorá podniká na základe živnostenského zákona ako aj osoba, ktorá podniká na základe iného, než živnostenského oprávnenia podľa osobitných predpisov (Kocisova & Stolicna, 2017). V praxi ide o výkon činnosti ako napríklad advokát, notár, súdny exekútor, veterinár. Aj fyzická osoba vykonávajúca poľnohospodársku výrobu zapísanú do evidencie podľa osobitného predpisu chápe Obchodný zákonník ako podnikateľa.

Pojem „podnik" Obchodný zákonník definuje ako súbor hmotných, ako aj osobných a nehmotných zložiek podnikania. Pri uvedenom vymedzení pojmu sa teda nutne rozlišujú tri zložky. Prvou sú hmotné zložky, medzi ktoré patria budovy, stroje, zariadenia, zásoby, dopravné prostriedky, t. j. tie, ktoré tvoria materiálnu stránku podniku. Druhou kategóriou je osobná zložka podniku pozostávajúca z riadiacich a ostatných zamestnancov podniku, ktorí sú určujúci pre jeho efektívny chod. Tretie miesto patrí nehmotným zložkám ako napr. obchodné meno, know–how, ochranná známka, obchodné tajomstvo, dobrá povesť (goodwill) a podobne. Okrem toho k podniku patria veci, práva a iné majetkové hodnoty (napr. logá, patenty), ktoré patria podnikateľovi a slúžia na prevádzkovanie podniku alebo vzhľadom na svoju povahu majú tomuto účelu slúžiť (Srebalova, 2008).

Bádaním v Zbierke zákonom Slovenskej republiky sme však zistili, že pojem rodinné podnikanie, rodinný podnikateľ či rodinný podnik nie sú obsiahnuté v právnom poriadku Slovenskej republiky. Jediný náznak tejto definície sme našli v koncepcii Ministerstva pôdohospodárstva a rozvoja vidieka SR v súvislosti s čerpaním nenávratného finančného príspevku. Uvedený dokument definuje iba osobu rodinného farmára ako:

- samostatne hospodáriaci roľník, fyzická osoba;
- spĺňa podmienky mikro- alebo malého podniku v zmysle odporúčania Európskej komisie;
- vykonáva poľnohospodársku výrobu ako podnikanie v zmysle Obchodného zákonníka;
- zamestnáva minimálne dvoch rodinných príslušníkov v priamom alebo pobočnom rade, vrátane manžela a manželky v zmysle Občianskeho zákonníka, ktorí sú zamestnaní v pracovnom pomere na ustanovený týždenný pracovný čas v zmysle Zákonníka práce.

Aj táto definícia však vychádza zo všeobecných pojmov obsiahnutých v ťažiskových predpisov občianskeho práva, ktorými sú Občiansky zákonník a zákon o rodine.

Saxunova et al. uvádzajú, že v roku 2016 tvorili malé a stredné podniky až 99,9 % z celkového počtu podnikateľských subjektov, poskytujúcich pracovné príležitosti pre takmer 75 % aktívnej pracovnej sily a podieľali sa na hrubej produkcii a tvorbe pridanej hodnoty viac ako 50 %. Okrem toho boli zdrojom nových inovácií a technológií, vytvárali konkurenčné prostredie, podporovali ekonomický rast. Ďalej vyrábali a poskytovali produkty a služby, ktoré neboli ochotné alebo schopné ponúkať veľké podniky (Saxunova et al., 2017).

3. Conclusion

Rodinné podnikanie ako osobitná právna forma v podmienkach SR na rozdiel od vybraných krajín neexistuje. Aj to je dôvod prečo nie je počet rodinných podnikov sledovaný Štatistickým úradom Slovenskej republiky. S podporou sa opakovane nestretol ani predkladateľ zákona o rodinnom podnikaní, ktorý mal záujem zlepšiť poskytnúť podporu zo

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strany štátu pre tento typ podnikania, čo nepochybne súvisí aj s novým chápaním inštitútu rodiny a prekonaním jej historických definícií.

Napriek tomu majú rodinné podniky svoje nezastupiteľné miesto nielen u nás aj vo vyspelých krajinách. Dôkazom je IKEA, Mc Donald či Versace, ktorí začínali podnikať formou rodinných podnikov. Preukázali sme, že existuje viacero ekonomicko-teoretických definícií, ktoré vymedzujú rodinný podnik. Ich autori sa však opierajú najmä o podiel na vlastníctve podniku, vplyv na rozhodovanie, ale aj o osobný postoj zakladateľa či majiteľa, spočívajúci v úmysle odovzdať rodinný podnik blízkemu príbuznému. Osobitným znakom rodinného podnikania je však vzájomné pôsobenie rodiny a podnikania, prostredníctvom ktorého sa vytvára tzv. rodinný záujem. V praxi ide o silný základ pre kontinuitu fungovania podniku a jeho budúcu prosperitu. Prelínanie sa rodinného a pracovného života je však súčasne aj jedným z najčastejších problémov, s ktorými sa rodinné podniky musia vysporiadať.

Podľa nášho názoru sa nám podarilo poskytnúť všeobecný prehľad zameraný na problematiku rodinných podnikov, ich charakteristiku, špecifická ako aj výhody. Objavili sme však aj úskalia ohrozujúce nielen rodinné podnikanie, ale aj rodinu ako takú. Záverom potvrdzujeme hypotézu o potrebe prijatia definície pojmov rodinné podnikanie a rodinný podnik. Pri ich tvorbe považujeme za nevyhnutné vychádzať z doterajšieho znenia Obchodného zákonníka a Občianskeho zákonníka. Rodinné podnikanie navrhujeme definovať ako sústavnú činnosť vykonávanú samostatne, vo vlastnom mene, na vlastnú zodpovednosť za účelom dosiahnutia zisku minimálne dvomi fyzickými osobami, ktoré sú manželia, alebo sú príbuzné v priamom alebo v pobočnom rade. Rodinný podnik podľa nás by mohol zákonodarca charakterizovať ako súbor hmotných, nehmotných ako aj osobných zložiek podnikania v bezpodielovom spoluvlastníctve manželov, alebo v podielovom spoluvlastníctve fyzických osôb príbuzných v priamom alebo pobočnom rade. Ich začlenením do právneho poriadku SR sa rodinné podnikanie jednoznačne stane osobitnou kategóriou podnikania a tento fakt umožní štátu ho efektívnejšie podporovať.

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EVALUATION OF INNOVATIVE INDEX OF INDUSTRIAL DEVELOPMENT FOR BRICS MEMBER COUNTRIES IN GLOBALIZATION CONDITIONS

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Abstract. It is widely accepted that a high level of scientific, technological and engineering development has become a source of national wealth. At present, the positioning of the country in globalization conditions is largely determined by the pace of development of new knowledge, the creation of innovative products and its export. As a consequence, authorities in different countries are facing the issue of state planning and usage of reliable macro-models for evaluation of innovation development in the building a cross-country mutually beneficial economic relations. During the research it is found that despite the presence of a great number of international estimates of innovation, the vast majority are based not only on objective indicators of the international economic and financial statistics, but also on subjective expert assessments. The aim of this study was to develop and approbate the methodology for calculating the innovative index of industrial development, which makes possible to exclude subjectivity determined by the expert's personal context, take into account the specifics of the country innovative systems and ensure the reproducibility of indexing results. This study performs an indicative analysis and extension of Global Innovation Index 2018. The results could be used in the decision making process at the governmental level, using approach to the interpretation of the available data on the state of innovative development of the BRICS countries, which enables to use and correct the opportunities of global scientific and technological cross-country interactions.

Keywords: innovation development, innovation index

JEL Classification: F62, O38, O33

1. Introduction

It is widely accepted that a high level of scientific, technological and engineering development has become a source of national wealth. At certain moments of history, societies make great breakthroughs known as technological revolutions. (Myslyakova & Zakharova, 2018) The countries are placed into complicated conditions of necessary transformations under pressure of a global competition. (Golova & Sukhovey, 2014) In current geo-economic conditions, our country needs to consider the foreign economic factor as an instrument for structural changes, for the diversification of regional economy, as well as for the realization

of a policy of import substitution, including exportoriented one. (Andreeva et al., 2018) At present, the positioning of a country in the system of world economic relations is largely determined by the pace of making new knowledge and creating innovative products, as well as by the country's effectiveness of scientific and innovative activities. (Sokolov et al., 2017) Economic development often goes hand in hand with the increasing pressure upon the extraction of fossil fuels, depletion of natural resources, and heavy impact on the environment. (Abdrakhmanova et al., 2017) Some researchers argue that innovation is certainly one factor of a sharp increase in top income inequality – particularly in developed countries like the U.S. (Aghion et al., 2018) Innovative development of Russia is very important, due to the situation that the able-bodied population in Russia continues to decrease in a significant way, the fixed capital investments are still low and the future productivity dynamics remain uncertain. If the current tendencies persist, the next two decades will show a considerably lower growth of the GDP of Russia than within the previous 15 years. (Andreeva et al., 2018) Numerous works have been devoted to the issue of ensuring regional innovative development. However, authorities in different countries are facing the issue of state planning and usage reliable macro-models for evaluation of innovation development in the building a cross-country mutually beneficial economic relations. The science, education and innovative activity as elements of high culture are especially fragile. One of the most critical goals of the modern strategic development of the Russian Federation is to connect together socio-economic and innovation processes. (Korhonen & Lyakin, 2017) The multiplicative effect of interregional cooperation on the socioeconomic development of a region has been studied in detail. (Glazyev, 2018) It is important to join forces with partner countries in order to achieve mutually better results. Russia forms a part of the group of countries named BRICS (Russia, Brazil, India, China and South Africa), which is one of the leading foreign direct investment providers in the world. (Tarkhanova, 2018) The transition from the American to the Asian systemic cycle of capital accumulation is currently taking place, which, in the middle of the 21st century, will inevitably lead to the moving of the world economy center from the West to the East (Kochetkov et al., 2017) and The Asia-Pacific Region is foreseen to be the next economic boom (Andreeva et al., 20104). The BRICS dominate without doubt their regions in economic and trade figures, as well as compete with - and in the case of China even overtake - the G7-states on the global level. (Spitsyn & Kulubekova, 2016) Cooperation between BRICS countries becomes more efficient and productive the more it covers all stages of the innovation cycle – from creating new basic knowledge to its practical application – new technology, products, and services. (Pioch, 2017)

The scientific result of the presented research is the comparative analysis of strengths and weaknesses in innovation development of Russia and its BRICS partner countries, which allows us making some suggestions for future improvement of the positions in terms of scientific and technological integration with partner countries.

2. Methods for assessing the innovative development of the country's economy

In December 2016 the Strategy for Scientific and Technological Development of the Russian Federation was published to establish the principles, priorities, main directions and measures for implementation of the state policy in this area, among the necessary measures mentioned transition to modern models of statistical observation, analysis and evaluation of

economic and social efficiency of research and innovation activities. This fact indicates the importance of developing a new methodology for assessing Russia's place in the innovative world.

2.1 Analysis of existing methods for assessing the innovative development of the economies of different countries

The following is a brief overview of analytical annual reports, where the analysis is based on composite indices and consists of a number of indicators selected depending on goals and objectives of the study. There are several indices of innovative development: Global Innovation Index (GII), Networked Readiness Index (NRI), Knowledge Economy Index (KEI), and Global Competitiveness Index (GCI). Moreover, we should mention Russian Regional Innovation Scoreboard (Cornell University, INSEAD and WIPO, 2018), made by National Research University Higher School of Economics (Russia). One of the limitations with using foreign analytical reports is the usage of indicators that are not always present in Russian statistics. This fact reduces transparency of calculations. As a result, all foreign methods need to be competently adapted to the Russian research conditions. Perhaps the most serious disadvantage is that the vast majority of foreign analytical reports are based not only on objective indicators of the international economic and financial statistics, but also on subjective expert assessments. As discussed above the aim of this study is to develop and approbate the methodology for calculating the innovative index of industrial development, which makes it possible to exclude subjectivity determined by the expert's personal context, take into account the specifics of the country's innovative systems and ensure the reproducibility of indexing results.

2.2 Methodological approach to the evaluation of the innovation index of industrial development of BRICS countries

To develop an author's methodological approach to the evaluation of the innovation index of industrial development of BRICS countries, places in the global innovation system was found out.

Table 1: Dynamics of BRICS countys' ratings in terms of the innovative development 2007-2018

Year	2007	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	107	130	132	125	141	142	143	141	128	127	126
Brazil	40	50	68	47	58	64	61	70	69	69	64
Russia	54	68	64	56	51	62	49	49	43	45	46
India	23	41	56	62	64	66	76	81	66	60	57
China	29	37	43	29	34	35	29	29	25	22	17
South Africa	38	43	51	59	54	58	53	60	54	57	58

Source: (The Global Innovation Index 2007-2018)

Table 1 presents a comparative analysis of the positions of BRICS countries *in terms of its innovative development*.

In this context, China's rise in the GII rankings over the last few years has been spectacular. Also from the table above we can see that Russia demonstrates positive dynamics in terms of the aggregate rankings, however, these relatively high positions are provided by the resource-related dimensions, e.g. various forms of R&D and innovation expenditure, share of university graduates in the total population, etc. However, the country is lagging behind along all the measures of the effectiveness of the utilization of these resources. Our methodology is based on the innovative index of industrial development. The innovative index of industrial development (IIID) is calculated on the basis of eleven selected indicators GII 2018, which have analogues among the target indicators in the Strategy for Innovative Development of the Russian Federation for the period up to 2020:

I1 Expenditure on education (%GDP),
I2 Tertiary enrolment (% gross),
I3 Gross expenditure on R&D (%GDP),
I4 QS university ranking (average score top 3),
I5 ICT access,
I6 Patent families 2+ offices/bn PPP$ GDP,
I7 High-tech net imports (% total trade),
I8 Patents by origin/bn PPP$ GDP,
I9 Scientific & technical articles/bn PPP$ GDP,
I10 Citable documents H index
I11 High-tech net exports (% total trade).

The use of the selected indicators is caused by the need to discuss innovations at the international level in order to identify the world's best practices, and IIID allows for an ongoing assessment of the factors affecting innovation. IIID was calculated for BRICS countries as the sum of the values of the indicators for each country, translated into a ten-point scale. The result of applying this methodology is the definition of the innovative index of industrial development in a comparative aspect through rating. This technique allows identifying the limitations of Russia's innovative development and adjusting the possibilities for Russia's intercountry scientific and technological cooperation with partner countries. These analytical procedures and the results obtained from them are described in the next chapter.

3. The results of the evaluation of the index of industrial development of BRICS countries

The initial data are presented in Table 2.

Table 2: The initial data for calculation IIID

Country	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11
Brazil	5,9	50,6	1,3	48,4	62,5	0,1	11,7	1,7	9,8	36,2	5
China	4	48,4	2,1	82,3	55,8	0,8	24,3	56,6	11,7	52,7	28,7
India	3,8	26,9	0,6	49,8	36	0,2	9,1	1,5	5,6	37,7	3,2
Russian Federation	3,8	81,8	1,1	49,6	72,3	0,1	8,1	7	7,2	36,7	2,3
South Africa	5,9	19,8	0,8	38,3	54,8	0,3	10,9	1	10,9	27,7	2,5

Source: (The Global Innovation Index 2018)

The Ranked Results of calculating IIID are the follows:
1. China – 100,41
2. Brazil – 60,25
3. Russian Federation – 57,44
4. South Africa – 52,32
5. India – 43,18

China's innovation process becomes evident in various areas. It shows some of its greatest improvements in global R&D companies, high-tech imports, the quality of its publications, and tertiary enrolment. In absolute values, and in areas such as R&D expenditures and the number of researchers, patents, and publications, China is now 1st or 2nd in the world [17].

As we can see, Russia shows quite good results among the other countries. As pointed out in the introduction to this paper, after the analysis of strengths and weaknesses of each country (see Table 3), it can be possible to understand how to improve the innovation development of Russia and how to use and correct the opportunities of global scientific and technological cross-country interactions. For example, it is important for Russian Federation to develop export and import potential, to increase expenditure on education and to strengthen patent activity, using experience of BRICS countries.

Table 3: The strengths and weaknesses of BRICS

Country	Strengths	Weaknesses
Brazil	Expenditure on education Tertiary enrolment Gross expenditure on R&D ICT access High-tech net imports High-tech net exports	Scientific & technical articles Citable documents H index Patent families 2+ offices
China	Gross expenditure on R&D QS university ranking Patent families 2+ offices High-tech net imports Patents by origin Scientific & technical articles Citable documents H index High-tech net exports (% total trade).	Expenditure on education Tertiary enrolment
India	QS university ranking Citable documents H index	Gross expenditure on R&D ICT access
Russian Federation	Tertiary enrolment ICT access Patents by origin	Expenditure on education Patent families 2+ offices High-tech net imports High-tech net exports
South Africa	Expenditure on education Patent families 2+ offices Scientific & technical articles	Tertiary enrolment Patents by origin High-tech net exports

Source: (own research)

4. Conclusion

The main objective of this work was to develop and approbate the methodology for calculating the innovative index of industrial development. The practical result is a higher degree of reliability to index estimates and the appearance of the additional capabilities of

multiple calculations of possible economic integration in the innovation sphere of Russia with other BRICS countries. The results can be used in the decision making process at the governmental level, after analysing the strengths and weaknesses of Russia and partner countries. Future work should therefore include the deeper analysis of indicators included in IIID.

Acknowledgment

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SOCIO-ECONOMIC IMPLICATIONS OF GLOBALIZATION – THE BENEFIT OR THE THREAT?

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Abstract. The current trend of globalization opens up to today's man an innumerable job options, travel opportunities, scientific progress, new era modern ways of acquiring the multicultural interpersonal relationships or other self-realization forms that are typical for the current "modern" man. In general, the globalization can be considered as a major asset both to Europe and to the world. Like every process, globalization brings advantages, as well as disadvantages. Assessing its positive or negative impacts is therefore an extremely challenging long-term process of exploring and then linking the scientific, economic, social, cultural, security, or political spheres of individual regions of the world. The aim of this article is to point out the main pillars of today's globalized society, such as the common monetary policy, labor migration, multiculturalism in the private and work sphere, no-borders security policy or public religious expressions, and after careful consideration to determine how much the today's rapidly growing globalization trend for the world continues to be beneficial or vice versa, globalization is becoming a threat to today's man. This assessment is very difficult because there are no criteria to assess the globalization as the whole. It is therefore necessary to see globalization as a complex development trend of the world, which, like many other world phenomena, necessarily brings also negative side effects that a globalized world has already tried to eliminate.

Keywords: globalization, labour migration, multiculturalism, benefit, threat

JEL Classification: F63, F60, J61

1. Introduction

Globalizácia ovplyvňuje nielen udalosti na celosvetovej úrovni, ale aj život každého jedného človeka, preto je dôležité venovať sa tomuto fenoménu a vedieť rozlíšiť, a tiež vedieť, čo je jej dôsledkom. Prečo sa pomerne málo vie o tak významnom jave? Odpoveď sa možno skrýva v nejednotnom prístupe odborníkov k celej problematike globalizácie a jej dôsledkov.

V posledných desaťročiach sa globalizácia postarala o zbúranie všetkých možných hraníc a bariér. Otvára ľuďom netušené možnosti, priniesla internet, otvorenie priestoru a s tým aj ale väčšiu zodpovednosť človeka ako príslušníka ľudského druhu. Zvyšuje vzájomnú závislosť všetkých národov i jednotlivcov. Globalizácia sama nie je hodnotiaca, nehovorí, čo je lepšie a horšie, ale poskytuje čo najširší prístup ku všetkému, čo si kto vyberie, ako sa

k tomu postaví. Každý sa môže dozvedieť takmer všetko, informácií je nadbytok a človek si musí sám vybrať.

Svet sa vplyvom globalizácie výrazne mení. S touto myšlienkou sa v rôznych podobách stretávame najčastejšie. Sú však tieto zmeny pre ľudstvo naďalej prínosom alebo žiaľ je to už skôr naopak? Je globalizácia už na svojom vrchole? Alebo môže dôjsť ešte k ďalšiemu, väčšiemu „globalizovaniu sveta"? Príspevok ponúka odpoveď na tieto a im podobné otázky s cieľom poukázať na hlavné piliere dnešnej globalizovanej spoločnosti (Veselovska & Zavadsky, 2017).

2. Prejavy a dôsledky globalizácie

S prejavmi globalizácie sa možno stretnúť vo všetkých sférach spoločenského života. Niektorí ľudia s procesom globalizácie spájajú nádej a prínos, iní v nej vidia hrozbu.

Vo všeobecnosti možno globalizáciu považovať za veľký prínos pre Európu, ale aj ďalšie kúty sveta zdevastované prvou, a následne i druhou svetovou vojnou - obnova zamestnanosti, priemyslu, ekonomiky, sociálneho života, atď... na to bolo nutné spojiť sa a spoločne postaviť Európu/svet na nohy - jednotlivé štáty by to sami nedokázali (Hall, 2017; Auguste, 2018).

V procese globalizácie možno rozlíšiť niekoľko subjektov. Z hľadiska vplyvu na vývoj svetového hospodárstva možno hovoriť o subjektoch makroekonomického typu, kde radíme napríklad štáty alebo vyššie stupne integrácie, subjekty mikroekonomického typu, napríklad nadnárodné spoločnosti a vládne či mimovládne organizácie, napríklad Svetová banka, Medzinárodný menový fond a ďalšie (Veselovska, 2017; Zavadska et al., 2016).

2.1 Hlavní aktéri globalizácie

Medzi hlavných aktérov globalizácie patria nadnárodné spoločnosti, priemyselné štáty a medzinárodné organizácie.

a) *Nadnárodné spoločnosti* – významní nositelia globalizácie. Môžu byť výrobné, obchodné alebo poskytujúce služby. Za ich vznikom stoja zmeny na globálnych trhoch, ktoré umožnili premenu národných či medzinárodných spoločností na vyššiu úroveň, kde sa tieto spoločnosti stali nezávislými na záujmoch krajín, z ktorých pôvodne vzišli (Karakaya, 2018). Sú to teda spoločnosti, ktoré nie sú závisle na geografických hraniciach štátu. Prvé nadnárodné spoločnosti začali vznikať už v 19. storočí, keď sa zapojili do dobývania nerastného bohatstva v kolóniách. Ich boom v druhej polovici 20. storočia odštartovalo „uvoľnenie kontroly nad presuny kapitálu, možnosti využívať predovšetkým v rozvojových krajinách komparatívne výhody, najmä nižšie náklady na pracovnú silu" (Mezricky, 2003). Zjednodušene ich možno charakterizovať ako podniky, ktoré vlastnia aktíva v dvoch alebo viacerých krajinách alebo tiež ako spoločnosti, ktoré sídlia v jednej krajine a stálu činnosť vyvíjajú v aspoň ďalších dvoch krajinách, kde realizujú 10 % svojho obratu. Predstavujú obrovskú silu v oblasti toku tovaru a služieb, kapitálu a know-how (Szetela & Mentel, 2016).

Medzi výhody nadnárodných spoločností patrí určite ich dynamika a flexibilita. Tieto spoločnosti sú schopné presúvať celú skupinu faktorov výroby tam, kde je to práve výhodnejšie, na rozdiel od národných či malých firiem. „Môžu presúvať fyzický

a finančný kapitál spolu s kvalifikovanou pracovnou silou a modernejšou technológiou. Tieto mobilné faktory v spojení s domácimi výrobnými faktormi sú schopní vyrábať za nižšie ceny" (Tarasenko, 2017). K ďalším výhodám patria materiálové a finančné zdroje, ktoré im umožňujú venovať sa výskumu a inováciám. Z výhod nemožno nespomenúť napríklad príliv zahraničného kapitálu, ľahšie realizácie niektorých investičných zámerov, zabezpečenie rýchlejšieho rozvoja niektorých odvetví, rýchlejšie šírenie technológií a know-how a väčšia aktivita domácich výrobcov z dôvodu konkurencie (Sala & Trivin, 2016).

b) *Priemyselné štáty* - tvoria druhú skupinu hýbateľov globalizácie. Medzi najvyspelejšími štátmi a niektorými nadnárodnými spoločnosťami existuje pevné puto. Možno povedať, že „ekonomická moc a medzinárodný vplyv týchto štátov sa odvodzuje o.i. od moci a vplyvu nadnárodných spoločnosti, ktorí v nich majú svoje sídla a pôvod" (Mezricky, 2006). Tieto štáty sa priamo zúčastňujú na vývoze a dovoze tovaru, služieb a kapitálu. Disponujú rôznymi nástrojmi, ktoré môžu ovplyvňovať medzinárodné ekonomické vzťahy. Jedná sa o regulatívne a menové opatrenia, administratívne zásady, právne predpisy a ďalšie. Cieľom týchto opatrení je odstrániť vnútorný trh krajiny, zvýšiť či znížiť priepustnosť ekonomických tokov cez hranice, tým tiež určujú, do akej miery sa národné ekonomiky prepoja s ostatným svetom alebo sa od neho izolujú (Korobeynikova, 2018)

c) *Medzinárodné organizácie* - ďalší nástroj, ktorý upravuje medzinárodné ekonomické vzťahy. Ide o združenie niekoľkých štátov na základe medzinárodnej zmluvy. V zmluve sa stanovia ciele, podmienky, spolupráca, štruktúra, rozpočet, práva a povinnosti členov a ďalšie náležitosti potrebné k ich fungovaniu (Jakoby, 2010).

Medzi najmocnejšie medzinárodné organizácie patrí Medzinárodný menový fond (internatiol Monetary Fund), Svetová banka (World Bank) a Svetová obchodná organizácia (Worl Trade Organization). Práve tieto tri organizácie možno považovať za kľúčových aktérov globalizácie.

2.2 Dopady globalizácie

Ako každý proces, tak aj globalizácia prináša pozitíva i negatíva. Ich hodnotenie je veľmi ťažké, pretože neexistujú žiadne kritériá, ktoré by hodnotili globalizáciu ako celok (Danyluk, 2018). Posudzovať dopady globalizácie nie je teda jednoduché. Rovnako ako sú rôzne názory na samotnú definíciu globalizácie, tak rôznorodé sú aj názory na jej dopad. Jedným z dôvodov môže byť problém merania globalizácie. Nižšie je ponúknutý stručný náčrt (ne)výhod dôsledkov globalizácie v kontexte Slovenskej republiky.

(Ne) Výhody globalizácie

a) *Možnosti rozvoja ekonomiky* - napr. spoločná mena EURO, silný DOLÁR (v minulosti i silná LIBRA). Profitujú ale z tejto menovej politiky všetky národy, alebo dochádza k „ožobračovaniu" menších štátov, ako napr. i Slovensko, na úkor „veľkých" hráčov ako sú Nemecko, Francúzsko a pod...? Alebo napr. presúvanie poľnohospodárstva do iných členských štátov EÚ - pozastavovanie poľnohospodárstva na Slovensku, i keď na to máme optimálne podmienky. Namiesto toho nám dovážajú potraviny, ktoré si sami vieme vypestovať, a tak sa nám nákup potravín ako malému čl. štátu výrazne

predražuje ALE „sme super moderná vyspelá krajina zapojená do globalizácie" ... Je to pre nás výhra? (Medrano, 2018)

b) *Možnosti migrácie za zamestnaním* - veľké krajiny poskytujú viac pracovných príležitostí, lepšie platených, t.j. dochádza k masovej migrácii obyvateľstva do zahraničia. Ale dôsledky? Odlúčenie od rodín, predražovanie cestovných lístkov (aerolinky, vlakové/ busové spoločnosti). Ľudia zo „slabších" krajín sú často chápaní ako „lacná pracovná sila". Zlé pracovné a ubytovacie podmienky v zahraničí....(Je to výhra?)

c) *Odstraňovanie štátnych hraníc* - rast kriminality. Zjednodušená cesta pre kriminálnikov, pre pašovanie tovaru, obchod s ľuďmi ... (Je to výhra?)

d) *Mixovanie náboženstva* - Islam ako reálna hrozba. Teror a nebezpečenstvo pre nevinných civilizovaných ľudí. Kvôli „globálnej slobode prejavu" .... .(Je to pre nás výhra?)

e) *Mulikulturalizmus* – „mixovanie" jednotlivých kultúr, rozličných ľudí ....medzinárodné tímy pracovníkov v práci, ktoré sú síce po odbornej stránke na vysokej úrovni, ale vzniká čoraz väčší problém s medzikultúrnymi rozdielmi (nedorozumenia, nevedomé urážky pracovníka) - alebo napr. aj samotný pracovný výkon človeka (Nemec je zameraný na výkon, je presný a svedomitý, príslušníkovi inej kultúry, napr. Indovi tento atribút nemusí byť vlastný)...

f) *Národná kultúra* - - ľudia strácajú pojem o hodnotách, o jedle, o histórii, o živote vo vlastnej krajine... (jeme pizzu, kebab, ...).

Do akej miery je globalizácia ešte prínosom pre našu Zem? určite je prínosom, ale kde sú jej „hranice"? Do akej miery by mala narúšať nacionalitu národa...?

3. Conclusion

Globalizácia je proces, ktorý bol síce naštartovaný v neďalekej minulosti, ale obratom sa stal jedným z najdiskutovanejších tém. Tento proces prešiel niekoľkými vývojovými etapami, každá z nich bola ovplyvnený inými podnetmi a výsledkami tak v ekonomickej, ako aj politickej a sociálnej oblasti (Norberg, 2006). V súčasnosti pozeráme na globalizáciu ako na fenomén, ktorý presahuje štátne hranice a spojuje jednotlivé krajiny do väčšieho, celosvetového celku. K rozvinutiu globalizácie prispieva predovšetkým liberalizácia obchodu, zrýchlený pohyb tovaru, kapitálu, osôb a efektívnejšia možnosť komunikácie. Jedným z nástrojov, ktoré celý proces zjednodušuje, je prijatie angličtiny ako hlavného dorozumievacieho jazyka v oblasti medzinárodnej politiky, obchodu, vedy a vzdelania. Dopady globalizácie sú pozitívne aj negatívne. Merateľnosť týchto dopadov je veľmi problematické. Preto tiež existuje mnoho názorov na samotné chápanie globalizácie, jej prejavy, dopady a smer budúceho vývoja.

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CYCLICAL AND INNOVATIVE DEVELOPMENT OF THE INSURANCE MARKET IN CONTEXT OF GLOBALIZATION

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Abstract. The cyclic and innovative components of insurance market development are researched in the context of globalization, the regularities of its functioning are revealed on the example of the Russian insurance market for the period 2001-2017. The purpose of research is improving the tools to ensure the competitiveness of insurance companies in the context of globalization is to align the cyclical fluctuations of the market. The comparison method, statistical analysis, method of cognitive modeling, method of expert evaluations were used in the research. Key development parameters and development trend were defined for Russian insurance market, its cyclic components are distinguished. It is noted, that the cyclical nature of the Russian insurance market is most consistent with the Joseph Kitchin short-term cycles lasting about 3-4 years. The cognitive modeling of the process of managing the insurance company competitiveness is carried out, the innovative components of insurance business development and key factors of modern insurance companies´ competitiveness were highlighted in the context of globalization. Based on the Delphic method, the research of innovative components of insurance company development is carried out, the key task for ensuring the competitiveness of insurance companies is formulated for growth phase of the economy. At the same time, based on the compliance with Pareto's hyperbolic distribution, the emphasis is placed on purposeful development of professional competences, knowledge, skills and increase of innovative activity of insurance companies, what can overcome the cyclical downturns of the insurance market in the context of globalization

Keywords: insurance market, cycles, innovation, globalization

JEL Classification: G22, O16, D82

1. Introduction

1.1 Relevance of the research

The relevance of the research is due to the increased competition in the modern insurance market, the lack of elaboration of some theoretical and methodological issues of its development, the need to improve the competitiveness of insurance companies is in the context of globalization and strengthening of cyclical and innovative changes.

1.2 Scientific significance of the research

The issues of functioning and development of the insurance market have been widely studied in the works of L. Allen, R. Davies, R. Inderst, A. Sellgren, A. A. Tsyganov, A. Wambach, R. T. Yuldashev, S. G. Zhuravin and others. The problems of innovation, development and competitiveness of companies at different times are reflected in the works of A. Alexander, R. Bergh, P. Horvath, R. S. Kaplan, Ph. Kotler, P. Krugman, D. P. Norton, M. Porter, H. Rampersad, J. Schupeter, G. V. Semyonov, A. J. Strickland and several others. At the same time, the authors have not sufficiently worked out the issues of identification and evaluation of the impact of cyclic and innovative components of economic development. Scientific significance of the research is consist the development of insurance business sustainability in context of globalization on the basis of allocation the cyclic and innovative components of its development and identification the key factors of insurance companies competitiveness.

1.3 Statement of the research task

Object of the research is patterns of insurance market development in context of globalization, its cyclical and innovative aspects. Subject of the research is competitiveness of insurance companies specializing on insurance other than life insurance. Purpose of the research is improvement of tools for managing the insurance companies competitiveness in context of globalization for adapting to cyclical market fluctuations. The objectives of the research include statistical analysis of the insurance market and the identification of its cyclic components, cognitive modeling the management process of an insurance company competitiveness, expert research the innovative aspects of an insurance company development. The research used a method of comparison, statistical analyses, method of cognitive modeling, expert evaluation method.

2. Cyclical and innovative development of insurance market

2.1 Research the cyclical development of insurance market: results and discussion

Cyclical aspects of insurance market development in context of globalization have been researched on example of Russian insurance market for period 2001-2017 meeting the criteria of relevance. The Russian insurance market is significantly different from the European and US insurance markets, which is predetermined by a later transition to market relations (Albouy & Blagoutine, 2001). At the same time, the presence of a fairly long history of insurance business development in the West allows us to apply comparative analysis in relation to the Russian market. (Outreville, 1990) Numerous researchers of insurance market isolated both endogenous factors (personnel qualification, level of financial capacity, quality of insurance services, non-compliance with international standards of the solvency requirements) and other factors caused by the peculiarities of the Russian economy (solvency of enterprises and citizens, legal and regulatory framework, monopolization of insurance companies, unfair competition, economic sanction). (Zhuravin & Ivanushkina, 2010; Ania et al., 2002) However, achievement of the specified period we can consider the strengthening of the Russian insurance market, as evidenced by the rather distinct positive dynamics of its quantitative indicators (Table 1).

Table 1: Statistics of insurance market in Russia

Indicators	Period, years						
	2001	2005	2006	2007	2008	2009	2010
1 Insurance premium, billion rubles	277	349	406	479	551	513	557
2 The growth rate of insurance premium, %	-	-	116	117	115	92	108
3 Insurance premium per capita, rubles	1899	2433	2841	3356	3865	3596	3899
4 The share of insurance premium (without compulsory health insurance) in GDP, %	3,11	1,62	1,51	1,44	1,34	1,32	1,20
5 Insurance indemnity, billion rubles	198	142	162	201	248	285	294
6 The growth rate of insurance indemnity, %	-	-	114	124	123	114	103
7 Insurance reserve (estimated data), billion rubles	-	-	219	260	296	345	468
8 The growth rate of insurance reserve, %	-	-	-	118	113	116	135
9 The share of insurance reserve in GDP, %	-	-	0,81	0,78	0,72	0,89	1,01
Indicators	Period, years						
	2011	2012	2013	2014	2015	2016	2017
1 Insurance premium, billion rubles	664	809	904	987	1023	1180	1278
2 The growth rate of insurance premium, %	119	121	111	109	103	115	108
3 Insurance premium per capita, rubles	4649	5658	6311	6874	6998	8059	8711
4 The share of insurance premium (without compulsory health insurance) in GDP, %	1,10	1,19	1,24	1,25	1,23	1,37	1,39
5 Insurance indemnity, billion rubles	303	369	420	472	509	505	509
6 The growth rate of insurance indemnity, %	103	121	113	112	107	99	100
7 Insurance reserve (estimated data), billion rubles	554	647	779	832	890	945	982
8 The growth rate of insurance reserve, %	118	116	120	106	107	106	103
9 The share of insurance reserve in GDP, %	0,92	0,95	1,07	1,05	1,07	1,10	1,07

Source: (Russia in figures. 2017: Statistical summary / Rosstat. M., 2017. 511 p.; Insurance today. Market dynamics [Electronic resource]. URL: http://www.insur-info.ru/statistics/analytics/; Analyses of the insurance market [Electronic resource]. URL: http://businessstat.ru; Russian statistical yearbook: 2007…2016)

The analysis of the Table 1 shows that in the period 2001-2008 there was a positive growth of the market: the volume of insurance premiums increased from 277 to 551 billion rubles, insurance indemnity also increased, but to a lesser extent – from 198 to 248 billion rubles. Opposite, during the global financial crisis of 2009-2010 insurance premiums were approximately at the 2008 level, although the volume of insurance indemnity continued to grow, what predetermined a decrease in the profitability of insurance companies (Fig.1). It can be assumed, what a more serious decline in the profitability of Russian insurance companies was prevented by the regulation of the market and the increasing demands of the regulator to the amount of the share capital and reserves of the insurance companies.

The insurance market has a more or less pronounced cyclic character of development, natural fluctuations in volumes and prices of insurance products and services (Lado & Maydeu-Olivares, 2001). The peculiarities of the Russian insurance market cycle should be considered both for insurance premiums and insurance payments, taking into account that the factors affecting the receipts and compensation of damage in insurance companies may vary (Sellgren, 2001). At the same time, the ratio of these indicators (profitability of insurance services) can be used as one of the important criteria of cyclicity (Figure 1). Against the background of reduction in the number of insurance companies and consolidation of the Russian insurance market, there is an accelerated growth of the client base in large companies, this is due to the transition of customers to larger insurance companies.

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Figure 1. The balance of insurance premiums and insurance indemnity of the Russian insurance companies is in the 2001-2017
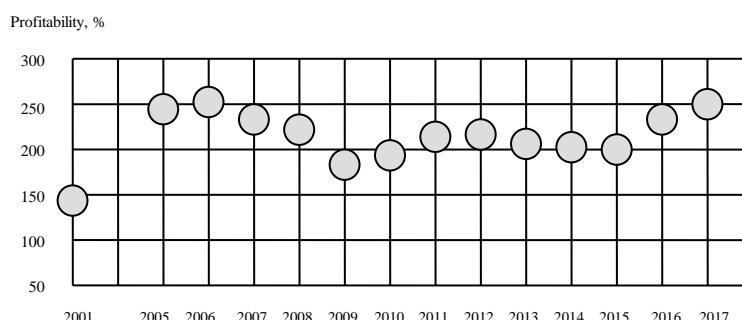
Source: (developed by the authors)

At the 2011-2014 there was some growth in the volume of insurance premiums and profitability of insurance services, but it was significantly limited due to the introduction of Western economic sanctions. In 2014 – early 2015 here was a certain slowdown in the growth of the Russian insurance market, which was later replaced by a steady growth due to overcoming the negative consequences of economic sanctions. It seems that the most cyclical nature of the Russian insurance market corresponds to the cycles of Joseph Kitschin lasting about 3-4 years (Kitchin, 1923), the mechanism of generation of which in economic theory is usually associated with time lags in the movement of commercial information. In our view, while it is hardly possible cycles of the Russian insurance market to compare Clément Juglar cycles the duration of 7-11 years (Korotayev & Trisel, 2010), since there are no sufficient grounds to link them with fluctuations in the investment activity of economic agents of the insurance market. At the same time, the authors admit possible fluctuations of the Russian insurance market parameters due to the serious impact of changes in the General economic situation, the global financial crisis, the recession, economic sanctions, other macroeconomic and meso-economic factors. (Whelan, 2010; Inderst & Wambach, 2001)

2.2 Research the innovative development of insurance companies: results and discussion

Successful work of the insurance business is predetermined by identification of the most important aspects of its development, among which it is advisable to highlight the cyclic (regularly repeated) and innovative aspects. The changing nature of competition in the context of globalization determines the search for new ways to ensure the competitiveness of insurance companies through the use of new technologies of insurance business, re-engineering of business processes, marketing methods, the introduction of new insurance products and others. Although insurance is one of the fastest growing industries in the Russian business, nevertheless, during the research period it was not possible to form an insurance market that would fully meet the needs of economic agents. This purpose can be achieved in the process of overcoming the crisis and the growth of the country's economy, this opportunity is indicated by the results of past studies. (Bergh, 2004; Landsberger, 1996) Within the framework of the activities of individual insurance companies and the functioning of local insurance markets, even in relatively unfavorable conditions, there are inevitably opportunities to use the innovative component of the insurance market development. (Johne & Davies, 2000) The real problem is that most insurance companies are not able to form and offer a new effective insurance product, to modernize the structure of insurance services, if economic agents as consumers of these innovations have not formed the appropriate market

preferences. This is not surprising, because if something new is unknown or unclear to the potential consumer, then there is no market demand for such innovation. On the other hand, as the world and Russian practice shows, the identification of the potential demand for innovations among consumers causes a quick and effective reaction in the scientific and professional sphere. Thus, the key to solving the problems of the development of modern insurance companies is not only in the field of scientific research and professional adaptation, but most likely in the sphere of insurance products consumption. This leads to a logical conclusion: insurance companies could stimulate market demand for new insurance products, using the country's economic transition to growth. This not only provides certain competitive advantages to insurance companies, but could also contribute to economic growth. (Porter, 1998; Krugman, 1996) The system of competitive advantages management for an insurance company is a poorly structured system, and the task of ensuring its competitiveness is a poorly structured task. The starting point of a poorly structured system research is the use of a cognitive approach that allows to fix the idea of the system under study in a formal model (Figure 2).

Figure 2. Cognitive map the process of ensuring the competitiveness for a modern insurance company
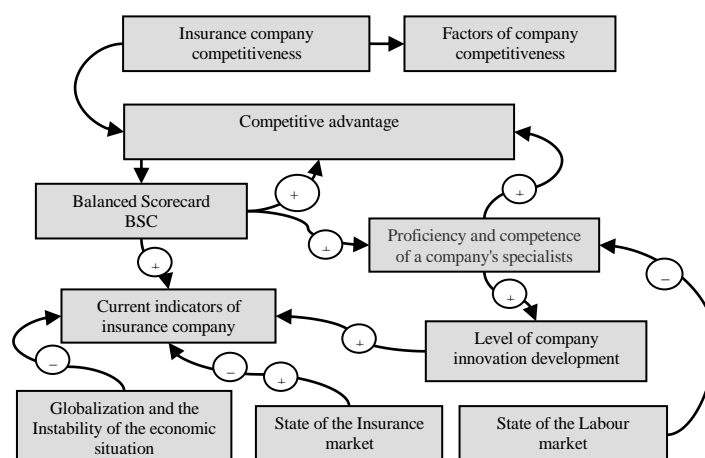
Source: (developed by the authors)

To ensure the competitiveness of the insurance company, it is necessary to regularly form, maintain and increase competitive advantages, which can improve the efficiency of the business. (Allen & Jagtiani, 2000; Rzepczynski, 2003) This can be achieved by improving the competitiveness management tools of the insurance company, which is widely described in open and public sources of information, on the contrary, its adaptation to the strategy of the insurance company is usually the know-how of the insurance company and depends largely on the structural approach to the implementation of its strategy.

2.3 Improvement of tools for managing the insurance companies competitiveness: results and proposals

An adequate economic and mathematical model of competitiveness, describing the impact of many factors of the external and internal environment of the modern Russian insurance company, is presented in the thesis. (Solomatina, 2013. In this thesis, on the basis of expert research, the most significant factors of insurance company competitiveness by recombination are put in accordance with the values of key indicators of the Balanced

scorecard, this allows to assess the impact of individual factors on the formation of insurance company competitive advantages. It was also found that the determining influence on the level of of modern insurance company competitiveness is provided by the group of factors "Training and development", "Clientele", "Finance", "Innovation", "Motivation", "Internal business processes", "Top management". In the development of these provisions, taking into account the changes in the economic situation in the world, an additional research of the degree of these groups factors influence on the level of modern insurance company competitiveness have been conducted. The assessment was conducted by the Delphic method with the involvement of a qualified group of 9 experts on a 7-point scale, where the highest rank in value corresponded to the strongest factor (Table 2).

Table 2: Matrix the grades a survey of experts

Factors (key indicators) x_i	Experts' evaluations									$\sum x_i$
	1	2	3	4	5	6	7	8	9	
Training and development x_1	7	7	7	6	7	7	7	7	7	62
Innovation x_2	7	6	6	7	6	6	6	7	5	56
Clientele x_3	5	5	4	6	5	6	6	4	5	46
Finance x_4	5	4	5	5	4	5	4	5	5	42
Top management x_5	2	3	3	2	2	2	2	3	3	22
Motivation x_6	1	1	2	1	2	1	2	1	2	13
Internal business processes x_7	1	2	1	1	2	1	1	1	1	11
Sum	28	28	28	28	28	28	28	28	28	252

Source: (developed by the authors)

The degree of agreement of experts' evaluations was determined by Kendall-Smith's concordance coefficient, which showed a sufficient degree of agreement of experts' evaluations about 0.60. The researched factors of an insurance company competitiveness were ranked by experts ($\sum x_i$) as follows: Training and development – 62, Innovation – 56, Clientele – 46, Finance – 42, Top management – 22, Motivation – 13, Internal business processes – 11.

Thus, along with the tools common in the insurance business (groups of factors "Finance", "Clientele", "Internal business processes") to form competitive advantages of insurance companies, it is necessary to use the tools of management skills and innovation activity of personnel (groups of factors "Training and development", "Innovation"). Hence, the key task of insurance companies to ensure their competitiveness in the phase of economic growth is the constant and purposeful development of tools of professional competence, knowledge, skills of specialists and increase of innovation activity. The forecast level of competitive advantages of the insurance company depending on the amount of funding for its development programs is shown in Figure 3 and largely corresponds to the hyperbolic Pareto distribution. The dependence was even more pronounced when the assessment was carried out by a more representative group of 23 experts on 28 groups of factors. The combination of these development programs an insurance company may produce a synergistic effect, manifested in the increase of its competitiveness, is what appears to be an effective tool for the alignment of cyclical fluctuations of the insurance market.

Figure 3: The level of insurance company competitive advantages on a cumulative basis as a result of the implementation of development programs "Competence" (x_1)," Innovation " (x_2), "Clientele" (x_3), "Finance"(x_4), "Top management" (x_5), "Motivation" (x_6),, " Internal business processes» (x_7)
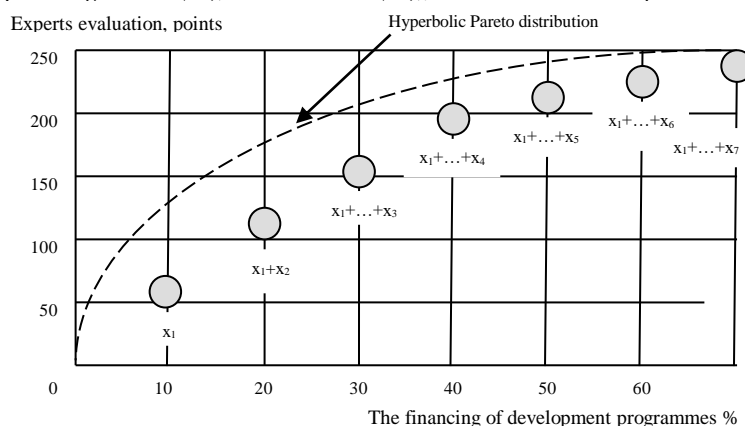
Source: (developed by the authors)

3. Conclusion

Have been researched the cyclic and innovative components for the development of the insurance market in the context of globalization, were been revealed the regularities of its functioning on example of the Russian insurance market for the period 2001-2017. Have been allocated cyclic and innovation aspects for its development. Were been researched the key parameters of the insurance market: the dynamics of the insurance premium, insurance indemnity, insurance reserves, the total authorized capital of insurance companies. The cyclicity of the Russian insurance market is established, the most part of its cyclicity corresponds to the short-term cycles of Joseph Kitschin lasting about 3-4 years, the mechanism of generation of which in economic theory is usually associated with time lags in the movement of commercial information. Expert research of innovative components of insurance business development is carried out, key factors of competitiveness of the modern Russian insurance companies with a sufficient degree of coordination of experts′ evaluation are revealed. On the basis of expert data, the key task of insurance companies in the field of ensuring their competitiveness in the phase of economic growth is formulated, with an emphasis on the constant and purposeful development of professional competencies, knowledge, skills of specialists and increasing innovation activity. The use of development programs "Competence" and "Innovation" seems to be an effective tool for leveling the cyclical fluctuations of the insurance market in context of globalization.

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IMPACT OF CLIMATE CHANGE ON
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Abstract. Purpose: What is the perception of insurances and climate change? Human behavior also leads to climate change, which has been repeatedly and independently confirmed by the Intergovernmental Panel on Climate Change (IPCC). Design/methodology/approach: Any here discussed objectives are only a small extract of all existing or potential objectives. The research method used by the author was an analysis of existing and published literature within Web of Science and elsewhere like the IPCC and its organisations (in total more than 15 references), mainly from the last decade. Findings: Research findings are shown within a brief summary to offer an opportunity for further analysis, discussions, or results. The climate change is an accepted possibility to measure effects on nature, based on numerical indicators and values. The emergence of external costs must be borne in full by the insurers and thus the insured persons. Research/practical implications: Results and implications for practice, applications and consequences are identified. Climate change and its effects can be evaluated in the short, mid and long-term run. The insured persons bear all costs incurred through the risk calculation of the insurer. Originality/value: This paper sees climate change from the economics point of view (a research gap so far) and is in contrast to most existing literature, which has the approach from the environment (natural sciences/technique) or society/politics.

Keywords: Climate change, costs for insurers and insured persons

JEL Codes: G22, Q50, Q51, Q5

1. Introduction

Extreme climate events have been shaping the weather for several decades, affecting not only nature but also humans. Since this leads to damage, they must be repaired and then paid for. Damage to state property or the general public is paid by way of tax payments, in the case of rising damage, rising taxes, in the private sector by means of insurance and thus by insured persons. The latter area is examined in this paper on the basis of the evaluation of published data or statements.

2. Definition and fundamentals of anthropogenic climate change

2.1 Definitions of climate change

Climate change refers to the change in climate on Earth and Earth-like planets, regardless of whether the causes are based on natural or human (anthropogenic) influences. Current global anthropogenic warming is one example of (not yet finished) climate change. In addition to natural factors, humans are also influencing the climate. The Intergovernmental Panel on Climate Change (IPCC), which summarizes the state of science on behalf of the United Nations, concluded in 2007 that warming of the Earth's atmosphere since the beginning of industrialization is mainly caused by the accumulation of greenhouse gases by humans (IPCC, 2007).

2.2 Man and his behavior as a major cause of climate change

There is broad consensus in the research community that the annual release of greenhouse gases released by human activities during the past 21st century is significantly faster than that of all known warming cycles in the last 66 million years (Zeebe et al., 2016). The IPCC writes in its fifth progress report in 2013 that it is extremely likely that people caused more than 50% of the warming observed in 1951-2010. According to the best estimate, the human impact on warming is roughly in line with the total observed warming during this period (IPCC, 2014). A recent study estimates the likelihood that the global temperature increase recorded over the past 60 years would have been similar, with no anthropogenic GHG emissions, at just 0.001% (Kokic et al., 2014). The climate change, which is expected to intensify in the coming decades (Hansen, et al, 2015), has the potential to trigger not only serious environmental changes, but also major global migratory movements ("climate change" or "environmental flight"). (Benko, 2017; Reuveny, 2007)

2.3 The IPCC and the Potsdam Climate Institute (Germany)

The Potsdam Institute for Climate Impact Research (PIK) was founded in 1992 and today employs around 280 people. Understanding climate change and its consequences is a task that no institution or country can do alone. PIK is part of a global network of research institutes and universities on global environmental change issues. PIK scientists play an active role in the United Nations Intergovernmental Panel on Climate Change (IPCC), often referred to as the IPCC, whose climate change working group is coordinated by PIK researchers (PIK, no date).

The Intergovernmental Panel on Climate Change is an institution of the United Nations. On his behalf, scientists around the world gather the latest developments in climate research and use recognized publications to assess the latest state of knowledge on climate change. The IPCC provides the basis for science-based policy decisions, without, however, proposing concrete solutions or providing policy recommendations. The IPCC gathers together the results of current scientific, technical and socio-economic literature published worldwide on these topics. It presents the scientific fundamentals, the consequences and risks of climate change and also shows ways in which humankind can reduce climate change and adapt to global warming (IPCC, 2007).

3. Consequences of climate change

3.1 Consequences of climate change for nature and the environment

The climate impacts are diverse and have an impact on our daily lives. Examples for this are:

- Health: Heat waves pollute people, animals and plants. They can have serious health consequences, especially in elderly and sick people.
- Agriculture: A shift in vegetation periods - those periods when plants grow, flower and bear fruit - has an impact on agricultural production.
- Energy production: Many power plants extract cooling water from nearby rivers and feed it again. River water, which is already too warm at the time of removal, or summer low water may in future lack sufficient cooling water. In extreme cases, this can lead to power plants having to be shut down. In addition, too warm water endangers the flora and fauna of the rivers (Umweltbundesamt, 2017).

3.2 Consequences of climate change for the economy

It is difficult to attach a precise price tag to climate change because of the number of factors that vary depending on the model. Nevertheless, there are studies that try to estimate the costs. A study by the German Institute for Economic Research (DIW) estimates the costs incurred by Germany over the next 50 years at 800 billion euros. Just over half of them account for direct climate damage, and the other half are made up of indirect consequences such as adaptation measures and increased energy prices. The EU also expects 20 to 65 billion euros in annual costs across Europe by 2080.

Such estimates may sound very speculative, but are important in giving policymakers guidelines on how to tax greenhouse gas emissions. The cost of one ton of emitted CO2 is estimated at \$ 30 to \$ 40. With an annual CO_2 emissions of 6.4 tons per capita, you could demand from every citizen up to 250 US \$ (Gehrig, 2017)!

3.3 Consequences of climate change for humans

Humans are sensitive to climate change - especially to rising temperatures. Performance and physical well-being can be sustainably influenced by heat. Weather extremes also represent an increasing danger. They cause accelerated generations and extended annual activity periods. Even extreme weather events can influence the existence of vectors. The floods at the Elbe (German river) flood in 2002, for example, provided ideal conditions for mass propagation of mosquitoes. An increased risk potential could in Germany in particular from Hantaviruses, Borrelia and TBE viruses emanate. Hantaviruses are transmitted by, among others, rodents, often by red chickens. They can cause fever and, in the worst case, kidney failure (Umweltbundesamt, 2013).

In 2003, the heat wave in Germany led to about 7,000 additional deaths from myocardial infarction, cardiovascular and renal failure, as well as respiratory and metabolic disorders. For Germany, between 2071 and 2100, it is estimated that heat-related deaths increase by 5,000 annually (Umweltbundesamt, 2013).

Table 1: Potential Impacts of Global Climate Change on Human Health

Global climate change effects: Temperature, Sea level, Precipitation	Storms & Flooding	Mobidity/ mortality / displacement
	Heat	Mobidity / mortality
	Vector biology	Infectios diseases
	Air Pollutants	Respiratory diseases
	Food supply	Malnutrition
	Civil conflict	Mobidity/ mortality / displacement

Source: (Self-made by D. Novak. Original source: Michigan State University, June 30th 2015)

4. Consequences of climate change for German insurers

4.1 Development of insured losses

The world's largest reinsurer, Munich Re, shows in its chart a clear development in the increase in damage in the general area of climate change. Despite fluctuations, the trend is obvious, of which the last three areas Meteorological events, Hydrological events and Climatological events show the consequences and damages of climate change.

Figure 1: Insured losses 1980 – 2014.
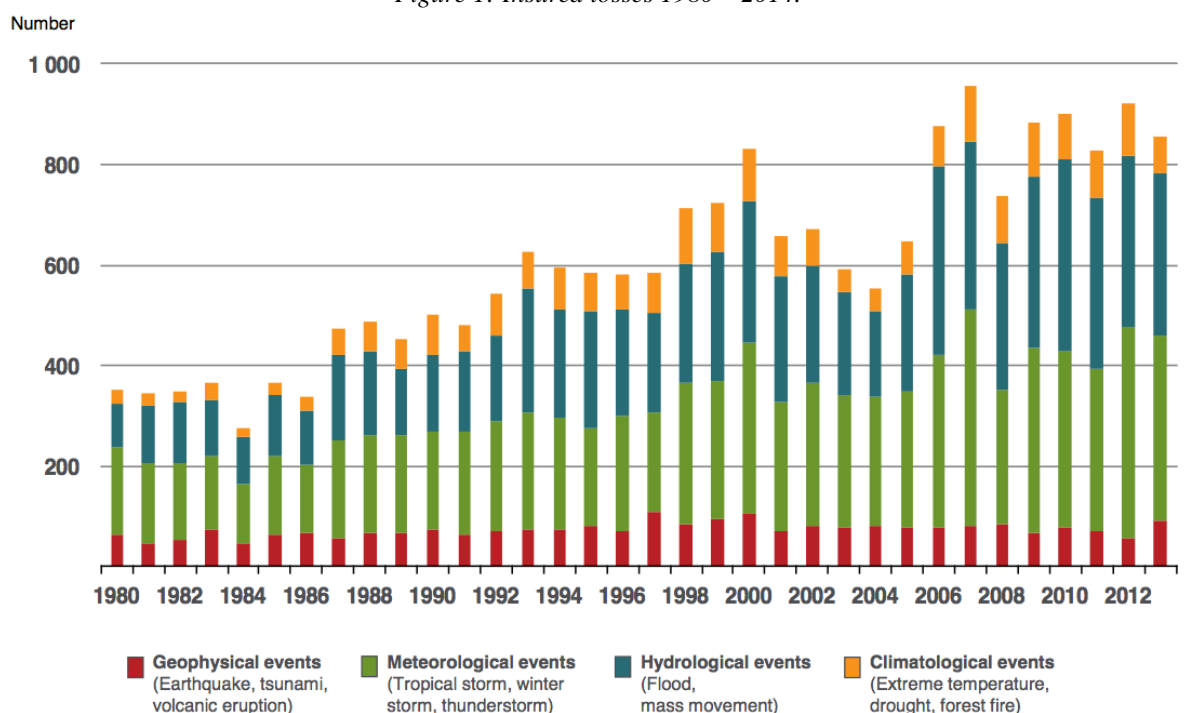
Source: (NatCatSERVICE, MunichRe, no date)

Munich Re has also concluded following a study of "Severe Weather in North America" that (emphasis added), "Among many other risk insights the study now provides new evidence for the emerging impact of climate change. For thunderstorm-related losses the analysis reveals increasing volatility and a significant long-term upward trend in the normalized figures over the last 40 years. These figures have been adjusted to account for factors such as increasing values, population growth and inflation (Munich Re, no date)."

4.2 Controlling this damage

$ 2.2 trillion - according to a UN survey, this is the sum of the environmental damage caused by the 3,000 largest corporations in the world in 2008. The London-based consultancy Trucost, which publishes the full study this summer, puts another bill in the equation: would the world's largest companies have to pay for the damage they cause to the environment that would cost them a third of their profits. However, given the real effects of climate change, such monetary "measures" are only of limited suitability to reflect the actual and long-term consequences for humans and the environment. Many companies have long recognized that active environmental management is part of corporate social responsibility, and that strategic environmental controlling strengthens their competitive position in the long term.

Reduced costs through less resource consumption and through process optimization as well as a better risk assessment are the main business objectives for the introduction of an environmental management system. This should be done seriously based on the ISO 14001 or EMAS standards, also known as the EU Eco-Audit Regulation (Treuenfels, no date).

4.3 Mathematical model for the risk assessment of climate change

Table 2: Example of a classification of the possible extent of damage.

Extent of Damage	Success factors of the company			
	Risk Assessment	Turn over	Costs	etc.
5 = Disaster Risk	The continued existence of the company is endangered			
4 = Large Risk	The occurrence of the risk forces the company to change its corporate goals in the short term			
3 = Medium Risk	The occurrence of the risk forces the company to change its corporate goals in the medium term			
2 = Small Risk	The occurence of risk forces the change of means and ways			
1 = Minor Risk	The occurence of the risk does not affect the risk assessment			

Source: (Self-made by D. Novak. Original source Hasenmüller, 2009)

The classification also concerns the possible extent of damage with regard to the relevant value drivers and performance indicators of the company. The above description can therefore also be understood as a suggestion for a possible work table, which is to be completed by the respective person responsible in insurance. Following this, the risk potential can be determined by multiplying the measures for the probability of occurrence and the extent of the damage. This can be classified into relevance categories that were defined in advance of the project between the company management and the project managers. Thus, the effects of climate change are perceived as a qualitative impairment of certain business objectives, e.g. of the enterprise value and / or the annual result assigned to an acceptance area. The result calculated in the above table can be displayed graphically in a risk graph. The classification into relevance categories offers help to immediately remove the threatening risks in the so-called ALARP area (as low as reasonably possible), to eliminate risks that have little priority and to identify risks that require a thorough detailed analysis (Hasenmüller, 2009).

4.4 Consequences of climate change for insurers

In the project with the Potsdam Institute for Climate Impact Research (PIK), Freie Universität Berlin (FU Berlin) and the University of Cologne were investigated with scientific methods effects of climate change on the damage situation of the German insurance industry for storm / hail and flood. One of the focal points of the project was the investigation of flood damage. The approaches and results are presented here. It compares the periods 2011-2040, 2041-2070 and 2071-2100 with today's climate. It has been shown that global and regional climate models can be successfully coupled with rainfall runoff models and insurance industry risk models. A total of seven model chains were evaluated. The results of the study show that there is a noticeable worsening of the high-water situation. On average, the greenhouse gas scenarios and the model chains must be expected to double the damage caused by flooding. The cost of hedging against natural hazards is likely to increase overall. However, the extent for Germany is likely to be in a range that can basically be controlled by the insurance industry. Insurers will continue to assume collective risks arising from natural hazards such as flooding in a changing climate. There are many ways to reduce the future loss burden. These include among other things an increase in risk awareness, individual prevention measures and sensible adaptation and mitigation strategies in relation to climate change (PIK, et al, 2011).

4.5 Scenarios for the insurance industry

The results show that significant changes are to be expected under the assumptions of the IPCC scenarios and the climate models used and damage functions compared to today's damage situation. This applies to the entire loss expectation as well as extreme events. According to current estimates, however, the business model of homeowner elementary insurance can be continued in the prudent handling of results. Depending on the extent to which the losses of the future are realized, insurers will be able to gradually adjust the conditions so that the natural hazard risk business is adequate. They will therefore carefully monitor developments, analyze them and, if necessary, make adjustments in their risk management.

It should be noted that there is a general increase in mean annual damage rates across all IPCC scenarios, all models and all periods studied until 2100. On average a doubling (84-114%) of flood damage until 2100 compared to the reference period 1961-2000.

5. Options for action and solution scenarios for German insurers (GDV, 2017)

The German insurance industry is involved in the climate issue for the following points:
1. Climate protection and adaptation to climate change must go hand in hand
2. Risk awareness arises through education
3. Safeguard the protection of the consequences of climate change better
4. Check existing development plans for hazards
5. Implement flood protection program near-natural and long-term
6. Apply findings from flood protection in urban land use planning and adapt standards
7. High-return capital investment does not have to be a contradiction to sustainability

6. Missing research

It has to be said that the rising costs of climate change have come to the insurers as evidence, but obviously only to a limited extent among the insured and probably also the politicians. So far, however, empirically determined numbers via e.g. the increase in the amount of damage per additional temperature increase of 1 degree Celsius are missing. This could be a future measurement factor such as the current fuel consumption of a car in liters per 100 kilometers driven. Only such clear and vivid examples will make it clear to all those affected, and that is basically all people in the world, what financial consequences climate change will bring. The databases of the insurers should be made available to all, because only they provide empirical results based on the numerous available statistics. The assessment methods and the classifications need to be subdivided more precisely and accurately.

7. Conclusion

Climate change (natural and anthropogenic) is obvious, it is in full swing and it is accelerating. These findings of the IPCC are clear and cannot be seriously questioned. The insurers' industry obviously has excellent databases to which research should have free access for the purpose of appropriate investigations. Climate change leads to greater damage and thus higher costs for all insured persons, as the costs are shared between all insureds. The costs are not only reflected in property damage of all kinds, but also in increasing illnesses and increased death rates. These are increasingly being analyzed, but obviously not sufficiently discussed in public. The reasons for this can currently only be speculated.

Ultimately, all climate change research and its economic and thus financial consequences for all people is only just beginning and needs many more empirical and longer-term studies in economics, both in terms of pure business economics and micro-economics/macro-economic effects. There are many evaluation methods, but not the most important ones have yet won. This also applies to the definition of the most important and internationally recognized uniform key figures. This is also the consequence of the fact that there is no uniform global controlling on this topic and therefore it is one of the key avenues of research.

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ECONOMIC DEVELOPMENT OF SOCIETY: INSTITUTIONAL FEATURES AND GLOBALIZATION PREREQUISITES

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Abstract. Processes of economic development of society in the context of informal institutional factors in terms of processes of globalization and deglobalization of national economies are considered in this article. The concept of mentality in general and economic mentality in particular are entered for the purpose of substantiation of regularities of economic behavior of people, which is demonstrated features of an economic system of this nation. The economic mentality is considered as system of social mental sets by means of which social and economic activity is programmed and realized. The need of correlation with features of the available economic system of any social and economic transformations meeting the requirements of openness of economy and globalization processes as such transformations can be successful only on condition of their compliance to the institutional environment of society is designated. Also various points of view of both the Russian, and foreign economists on mentality processes formation, and on the factors that have paramount importance at modification of economic mentation of people are considered. The compelled closeness of the Russian economy caused by events of 2014, introduction of the mode of sanctions and countersanctions fits into the deglobalization process which is shown in various parts of former, almost monolithic global economy. The authors analyze the mental characteristics, which determined economic structure of the Russian society and designate possible ways of development of national economy.

Keywords: informal social and economic institutes, economic development, economic behavior of people, economic reforms, globalization

JEL Classification: O21, O43, Z10

1. Introduction

Being one of the system-forming factors of the development of society, the economic mentality (or the concept of mindset which is a synonym) of the people is a combination of features and qualities characteristic of a given epoch and a given area that determine the individual's economic behavior taken separately and the people as a whole. Economic mentality can be viewed as a system of socio-psychological sets through which the socio-economic activity based on a set of established methods, forms and traditions, behavior stereotypes is programmed and established, activity which determines the socio-economic

thinking and, as a consequence, the motivated behavior of an individual and a nation in general, that is, the economic order. It is a system that forms and develops as a result of a long and sustained impact of natural, geographical and socio-economic conditions. (Moravcikova et al., 2017) In addition, the external environment influences the formation of these socio-psychological sets. Since the globalization processes are of cyclical, wave character, the impact of these processes was weakened or intensified at different periods of the development of society under external pressure or in connection with the internal government policy.

2. The emergence and the evolution of national institutional factors in a globalizing economy

At the end of the twentieth century, the market transformations of the Russian economy, which became necessary in the new conditions as a result of the growing globalization trends in the world, made it necessary to thoroughly study the factors affecting the possibilities of economic development, one of which was the factor of the national economic mentality. (Van Holm, 2017)

The clarification of the "mentality problem", according to I. K. Pantin, lies in the analysis of the reasons that have made it necessary today to "consider the features of the Russian national character". Among these reasons is the Russian modernity: "The national traits and habits of Russians are so impressive, and sometimes puzzling, expressed in ups and downs of the modern time, in the economic sphere, in the arena of political activity, that social scientists cannot leave them unattended". (Pantin, 2002)

So what is the national economic mentality? Is it permanent in time and space, being an absolutely invariable value, or is it a function of some variables? Is it right to talk about the national economic mentality of the superethnos, such as, for example, Russia, Western Europe, or a broader union of people built on a global economy? How does the economic mentality express itself in all globalization processes? Can the mentality "rebuild" and "adjust" to the requirements of modern economic life in a fairly short period of time? A lot of such questions, connected to the attempt to understand the mentality in general and the economic mentality in particular, can be asked. (Gumilev, 1990)

One can refer to it as to historical experience, people's memory, on the basis of which a nation is formed and developed, as a certain level, according to which members of a given community equal, who remain faithful under any circumstances to their local structure of development. (Butek, 2015; Beugelsdijk et al., 2018) The worldview and world outlook of the people retain their basis when the external environment changes, and they do this most successfully with the possibility of building into this environment. Therefore, the problem of mentality can be considered as a philosophical, ideological, socio-economic problem, covering all spheres of existence of the people and the state. (Kormanova, 2015; Fritsch, & Wyrwich, 2017; Syaglova, 2017)

Mentality turned out to be such an interdisciplinary concept that sociologists, psychologists, philosophers, economists, culturologists and politicians get engaged in seriuos studies. Books, scientific articles, conferences, round tables are dedicated to the problems of mentality. "Mentality", "national character", "people's soul", "genotype" are the synonyms or definitions close to it. There is no explicit opinion of their identity, if only because one can find no less than a hudred definitions of mentality, as well as concepts related to it, which is

due to the direction of the author's interests - philosophy or sociology, psychology or economics. (Kirillovskaya et al., 2016) There is no clear difference between the concepts of the "mindset" and "mentality" in the literature, although there is enough opinion on this issue. Particularly intensified attention is paid to the problem of distinguishing the concepts "mentality", "mindset", "national character" in philosophical works on the problem of mentality. (Veretennikov, 2000; Grineva, 2003)

The word "mentality" is connected to the so-called the Annales school or group, which has been the prevailing direction of historical science in France for more than 70 years now and, to a lesser extent, in England, the USA and other countries.

The French historian M. Bloch, one of the founders of the Annals school, according to A. Y. Gurevich, "uses this capacious word that cannot unequivocally be translated into Russian to sometimes determine the "way of thinking", sometimes the "mental ability", sometimes the "psychology" and the "attitude of mind" and perhaps the whole set of basic concepts of the world, through which human consciousness processes the chaotic and heterogeneous stream of perceptions and impressions into an ordered picture of the world in every given epoch". (Gurevich, 1986)

The authors of numerous Russian works (Mayminas, 1994; Novikov, 2017) while not always giving a detailed definition of the mentality, agree that the mentality (and the identical term mindsest) is one integral characteristic of people living in a specific culture that allows us describing the uniqueness of these people's vision of the world and explain the specifics of their response to it.

That is, the mentality characterizes the specificity of the public consciousness of one group of people relative to the social consciousness of other groups of people, and it is a question of fairly large groups, such as an ethnos, a nation, or a social stratum. It contains the consice past history of the country with all its contradictions, found and not found solutions to problems, ways of national development. (Harumova, 2015; Fagerberg & Srholec, 2017) Mentality stems from a large part of the population, it has a direct impact on economic, political, social relations and reveals the features of the thinking and consciousness of a fairly large group, an ethnos, which is the basis for the formation and development of the mentality. (Grechenyuk et al., 2016).

In the process of formation of the national mentality of every nation an important role is given to specific conditions of its socio-economic, social and state-political development in the course of which social psychology, traditions, customs, and culture are being formed which are specific to the nation and distinguish it from other nations, enshrining in the gene level of the people. (Pashkus, 2012)

As a result, the economic structure of the country is formed under the influence of such factors as the habitat (natural and climatic conditions, landscape, location), demographic conditions (number and composition of the population), state system, geopolitics (relations with neighboring nations) and genetically transferred prerequisites of the nations, that is, the socio-economic genotype, which, in conjunction with culture, determines the mentality of the nation and the economic mentality being its componetn. None of the factors individually are decisive, they are interconnected and interdependent, but with a favorable combination they determine the pace of economic development of different nations and states. (Altunyan & Kotsofana, 2016).

Globalization of national economies by facilitating the exchange of both goods, technologies and the ways of pursut of economic activity and, accordingly, the ways of the arrrangement of the life sustaining activity, by leveling the way of life of different nations erases specific features and makes it possible to create a single type of national character in the long term perspective. (Neumann, 2015) However, one must remember that the highest rates of economic growth can be achieved by society not as a result of overcoming institutional differences, but with the most correct use of them. Examples include the Chinese and Japanese societies where adherence to national traditions of economic behavior has not prevented their inclusion in the global economy, as well as the Anglo-American civilization that has become the basis of the global environment, in which one can see the full correspondence of economic realities to the established system of socio-economic institutions. (Madr & Kouba, 2015)

That is, the economic development of the state, the planning and implementation of reforms, their progress and consequences directly relate to the prevailing mentality in a given society that generates national traditions determining economic thinking and related economic theories that reflect differences in national economic interests.

Russian economists (after 1990) define economic development as, to some extent, a derivative of the mentality, and in particular of the economic mentality of the nation. Moreover, the economic mentality in particular and the national character as a whole, also adapts to changes in external conditions. (Korostyshevskaya & Urazgaliev, 2016)

Given the relatively high rate of possible changes in the material and economic sphere (primarily due to globalization processes) and taking into account the numerous and long-term studies of features and traits of a national character, confirming the invariability of those for decades and even centuries, we can conclude that the Russian institutional environment incorporates in the world economic systém. (Dengov et al., 2016).

However, in order to understand whether the national character as a whole and the economic mentality in particular can change under the influence of globalization or any other processes in a relatively short period of history, one should look at the theory of G. Duby. (Duby, 1996) G. Duby considers the mentality consisting of four levels, lying at different depths of the subconscious and formed under the influence of various factors. (Coulibaly et al. 2018)

The most deep-lying mental layer, according to G. Duby, is associated with the biological properties of a person. It changes along with the evolution of biological properties themselves. This mental layer is inherent in all representatives of humanity without distinction, it is the basis of mentality, natural invariants acting at the level of the genetic code. Universal values lie here - the person and the family, their safety and well-being. Probably, the long-term structures of archetypal or value-based order attribute to the same layer.

The second level contains those elements of mindset, which consist of the representations and patterns of behavior inherent in many generations. These are the invariants of the national history that are formed as a result of key events of ethnogenesis, influence the formation of stereotypes of national behavior and are unconsciously reproduced in every new generation. They are long-lasting, but not eternal.

The processes of the next level are more rapid and less continuous. They include transformations that correspond to general changes in the political, social and economic spheres of the life of society.

According to G. Duby, the last (the fourth) level is the most rapid and superficial, since it is formed within relatively small communities (for example, a village or a production team) under the influence of local features, so when considering the mentality of large groups (such as a nation) one does not have to take it into account.

Thus, the mentality is a multidimensional space-time structure, each of the axes and planes of which is divided into levels, each of which also represents a certain complex system, depending on a number of factors. One of the axes is the historical time. Planes are economic, ethnic, cultural mentality and so on.

The plane of interest - the economic mentality - also represents a four-level diagram, with the second and third-level processes being the main ones, determining the economic mentality. The second level, having been formed for many centuries, is the basis that is changing gradually under the influence of events in the political and social life of the state over many generations, the third level can undergo certain changes from generation to generation.

At the moment, we are in a declining phase of globalization, when the growth of nationalistic sentiments, the interest in own history and the desire to choose the path for the society and the state development in accordance with national traditions and own interests are manifested almost everywhere in the world. That is, the features of the second, deep level of mentality are more clearly manifested. And this factor should be taken into account when developing plans for economic development in the short term.

3. Conclusion

Thus, the economic mentality is a multidimensional space-time system of socio-psychological mechanisms that forms and develops as a result of a long and sustained impact of natural, geographical and socio-economic conditions, mechanisms through which socio-economic activity is being programmed and implemented, which, in turn, determines the socio-economic thinking and, as a consequence, the motivated economic behavior of the nation, that is, the economic order. This economic order (the path of economic development) chosen correctly on the basis of the analyzed social and economic formal and informal institutions can become the basis for the country's successful development (Ermolaev, Salomatina, 2016). For Russia, where the development and formation of the main business patterns initially took place in conditions unusual for other countries, the understanding of the principles of building of own economic mentality is most necessary both for the formation of the best way of development and for building of own model of economic modernization. This model offers the best option for applying the current system of socio-economic institutions to the external reality. Since the creation of a relatively stable market economy, that is, since the mid-1990s, Russia pretty much fitted into the global economy, constantly expanding the volume of import and export. The forced closed nature of the Russian economy, due to the events of 2014, the introduction of the sanctions and counter-sanctions, fits into the process of de-globalization, manifested in various parts of the former, almost monolithic global economy.

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GLOBALIZATION AND DUAL QUALITY OF FOOD AND DRUG PRODUCTS

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Abstract One of the most media-intensive issues dealing with the relationship between the old and new Member States of the European Union is the dual quality of food, washing powders and other drug products. A long-term research in the countries of Central and Eastern Europe has revealed products of different formulas with different contents of basic components and additives, misusing meat substitutes, smaller amounts of fruit, replacing natural sugars with artificial sweeteners, different proportions of active enzymes, etc. The above-mentioned condition is attributed to the transnational trade chains, benefiting from their engaging with the international economy and international integration. Economic theory offers several ways of finding a solution to the different quality of products sold under the same brand and packaging. The first one concerns socially responsible entrepreneurship within the business ethics. The second solution relates to the ability of the market mechanism to allocate efficiently scarce resources providing that there are advanced supply-side competitions and symmetric information that prevents a negative selection. The third solution currently proposed by the European Commission is in the field of law in the sense of the European directive on unfair commercial practices. The subject of this paper is to explore how globalization and global business that affects the quality management, lead to a widening of differences or, on the contrary, to the harmonization of food quality across all EU Member States.

Keywords: globalization, dual quality, business ethics, business law

JEL Classification: D21, F61, K20, M14

1. Introduction

The existence of the dual quality of food and drug products in the old and new EU Member States has been one of the most discussed topics in the recent years. Repeated surveys conducted in the new EU Member States have confirmed [7]that some products are of a dual quality. As reported by Vitova and Cerny (2017), the dual quality is the issue in the case where products differing in taste, composition, quality and weight in grams are launched onto

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[7] An example may be the research conducted by the Institute of Food Preservation of ICT Prague in October 2017 for the Ministry of Agriculture of the Czech Republic testing the properties of 21 selected items of food from the Czech Republic, Slovakia, Hungary, Germany and Austria. The test identified 11 products as different, 3 slightly different and 7 products were of the same quality (http://eagri.cz/public/web/file/552536/Komplet_21_vyrobku_Vyzkum_druha_faze_testovani_dvoji_kvality.pdf).

the market under the same or similar packaging. The same problem also occurs if, at first, products come onto the market with higher quality ingredients and after a certain time the recipe is changed in favour of lower quality ingredients. Especially foreign multinational manufacturers and chain store retailers benefiting from their involvement in the global economy and integration are regarded as the culprits of the above-mentioned state.

Theoretical economics deals with elimination of the dual quality in several possible ways. The first way is based on socially responsible business activities of companies that regulate their behaviour in the desired direction by themselves by emphasising their business ethics. The second solution relies on the self-regulating market mechanism that can effectively allocate scarce resources through advanced competition on the supply side and to remove or reduce asymmetric information leading to the negative selection. The third option is the direct regulatory intervention by the central authority in the field of law through the amendment to the European Directive on unfair commercial practices. The subject of this paper is to analyse how globalization and global business have contributed to the origination of dual quality first and after that to its deepening or, on the contrary, to its elimination. The first part analyses the origination of dual quality, the second part deals with the possibilities how to eliminate it. The third part of the paper examines the impact of globalization on individual ways of tackling its elimination.

2. Origination of dual quality

The dual quality of food and drug goods is a result of the simultaneous action of several factors affecting the markets of the new EU member states. The most important factors include the growth of the openness of Central European economies after 1989 including their entry into the European Union, trade globalization, differences in the purchasing power of the population of the old and new EU Member States and the existence of asymmetric information as one of the sources of market failure.

The first of the above-mentioned factors relates firstly to 1989, which brought about the necessary political changes that allowed the Central European countries to significantly increase their involvement in the international trade. Although, in a strictly economic sense, centrally planned economies cannot be classified as closed economies, their degree of openness was still significantly lower that would correspond to standard market economies. The central administration of foreign trade prevented the use of absolute and comparative advantages on which international specialization and trade are based. Liberalization of external relations, devaluation of national currencies, abolition of foreign trade monopolies and other steps have enabled trade to grow. Another important impulse was the initially planned and then realized entry of the Central European countries into the EU, which meant another institutional impetus to remove barriers to international trade (Zidek, 2006). The membership of the Central European countries in the most important international integration group such as the EU has resulted in the full involvement of the new member states in the globalized economy.

The origination of dual quality is related to another factor that has found its use after the involvement in the global trade and integration. It was the development of trade in individual internal markets and the internationalization of trade, which is most commonly understood as the export of retail store concepts and activities, which gained in intensity especially in the

1970s. According to Cerny (2010), the cause was the fact that internationalization in the form of multinational business activities has brought considerable benefits to business parties. In 1990, more than a hundred European retail companies developed their business activities in several EU countries at the same time (Cimler& Zadrazilova, 2007). In the case of the Czech Republic, the first foreign multinational retail chains established themselves already in the early nineties. The entry of foreign retail chains has brought an increase in the share of foreign goods. This way the products that Czech customers knew from their shopping abroad and which they believed were identical appeared in the market in a large extent.

The different purchasing power of the population of the old and new EU member states has been the third factor contributing to the development of dual quality. Although the Central European countries have been considerably converging towards the wage and price levels of the developed European economies over the past thirty years, there is still a gap resulting from the centrally planned management that has not been overcome yet. It is understandable that lower purchasing power exerts considerable pressure on reducing production costs, which are then reflected in the final price. However, the maths is simple and "quality equals price," therefore, the lower price of the product must be logically reflected in its lower quality.

The last factor influencing the development of dual quality is information asymmetry as one of the causes of market failures, i.e. a situation where the market is unable to allocate scarce resources efficiently. Complete and accurate information, i.e. symmetric information, is one of the prerequisites for the perfect competition which is necessary for the rational decision making of consumers (e.g. Novy, 2011a). The opposite is asymmetric (imperfect) information that represents a situation where one party has much better and more accurate information than the other one. The existence of asymmetric information leads, besides other things, to the problem of negative selection. According to Mankiw (2001), negative selection "arises if one person knows about the properties of goods more and the uninformed person is forced to risk buying or selling goods of poor or high quality." The previous paragraph has stated that the pressure to reduce final prices is the cause of different quality. Information asymmetry is not the case where goods of different quality, for example, have different packaging. The problem of asymmetric information occurs if low-quality goods are regarded as high-quality goods.

3. Options to eliminate dual quality

If we view the existence of dual quality as a manifestation of inefficient allocation of scarce resources, the economic theory then offers a wide range of different solutions. The first approach is based on corporate social responsibility, which can self-regulate the desired behaviour of companies. The second approach is based on functioning of competitive environment, which, through sanctions of market competition, again by the self-regulating principle, does not allow firms to act against customers. In the event that for various reasons ethical and moral principles are suppressed in the given company, when the competitive environment either does not work or is not strong enough, a regulatory intervention by the state must be implemented in the form of legislative enforcement of "game rules".

Corporate Social Responsibility is one of the most examined areas of economic research. One of the theories that deals with the efficient allocation of resources in relation to business

ethics is institutional economics as a critical response to the underestimation of the role of institutions in neoclassical economics (e.g. Novy, 2011b). Institutions present rules that regulate the relationships of market subjects. They may take the form of formal institutions (constitution, laws, directives, regulations, etc.), or the form of informal institutions (norms of conduct, traditions, established customs, etc.). Business ethics in this sense is primarily based on informal institutions since ethical corporate behaviour, in this case, results from established patterns of behaviour when the respective "rules of the game" are voluntarily accepted by individual companies as a result of, for example, family traditions. Moral imperative as the basis of natural morals for individual companies does not allow them to deceive customers. Consistent care for strengthening informal institutions through family education, school education, mass media, political environment based on value ideals, etc. is thus a long-term solution to the problem of double quality.

Market competition sanctions are an effective tool of the market economy for enforcing companies to comply with "the game rules". They lie in the possibility that dissatisfied customers can go to the competition. The imposition of these sanctions is linked to the fulfillment of two conditions: the customer must be aware of his/her detriment and must have an option to purchase another product, or more precisely, to go to the competitors (see Novy, 2011b). The first condition is related to the already-mentioned symmetric information and the second condition is associated with the existence of several companies in the sector and low transaction costs consisting in the change of purchased goods (another supplier). The second condition implies that, in the case of absolute monopoly, the possibility of switching to competitors is zero and in the case of oligopoly it is very limited.

Only a monopolistic form of competition characterized by a large number of firms and zero barriers to the entry of new firms into the sector offer the customer the possibility of transition. Low transaction costs associated with the change of purchased products can take the form of monetary costs (for cancelling the obligation to purchase the product or service) or non-monetary costs consisting in the reluctance to change buying patterns, to test the quality of new products or suppliers, etc. To combat the dual quality, the state has thus the use of market instruments that can reduce the extent of asymmetric information, remove barriers to the entry into the sector and reduce the transaction costs associated with switching suppliers.

The last option to eliminate the dual quality is the regulatory intervention of the state in legislation. Under the existing European legislation, the dual quality has so far been addressed by Regulation 1169/2011 on the provision of information to consumers which states, inter alia, that companies are obliged to describe food in an adequate and truthful way, for example on labels, see symmetric information as well as Directive 2005/29/EC on unfair business practices prohibiting to deceive consumers by presenting different products in the same way, see asymmetric information. The European Commission´s efforts to increase the consumer protection from dual quality, namely by eliminating the already mentioned asymmetric information, has resulted in the approved proposal for the new European directive[8]. As mentioned by Vítová (2018), the proposal for Directive of the European Parliament and the Council 2018/0090 (COD) amends Directive 2005/29/EC as follows: "*A commercial practice shall also be regarded as misleading if, in its factual context, taking into account of all its*

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[8] The Directive must still be approved by the European Parliament and individual EU Member States.

features and circumstances, it leads or may lead to the situation where the average consumer takes a transactional decision he would not have taken otherwise and it includes ... ..c) any marketing of a product which is identical with the same product marketed in several other Member States, although such products have a substantially different composition or characteristics." This legislation, at first glance tackling the issues of dual quality in an elegant and simple way, however, involves a whole range of ambiguities and complications at the practical level. According to Vitova (2018), examples may be the choice of misleading criteria and weight attached to them, the definition of an average consumer, the product identity criteria, etc. The indicated problems can thus significantly reduce the effectiveness of consumer protection against dual quality through this specific legislative regulation.

4. The influence of globalization on eliminating double quality

In the preceding chapters we have examined some causes of dual quality origination. We will now look at how globalization processes amplify or weaken the causes.

When assessing the impact of globalization on the dual quality it is first necessary to deal with the very term of globalization (e.g. in Novy, 2016). According to many authors, this term is not clearly defined (e.g. Breinek, 2005, Jary, 2015, Zidek, 2009). Bernasek (2002) understands globalization as the process of microeconomic nature leading to the acceleration of the flow of goods in the regional and global dimensions. According to Klvacova (2003), transnationality is characteristic of the globalized economy. Zidek (2009) describes globalization either as a qualitative change or as a continuation of integration tendencies. In this context, globalization for Jenicek (2012) is a phenomenon that makes the autonomy of individual national states problematic; for Cerny (1996) and Hejdukova (2015) it is the convergence process of economic, social and political structures. According to Rojicek (2012) globalization weakens the boundaries between national states. For Woodward et al. (2001), economic globalization is the predominant area of globalization over the past twenty years. Nowadays, Hejdukova and Kurekova (2016) offer their current view of globalization, which is that globalization plays an important role in the global migration of human resources.

In terms of causes of the dual quality, globalization has a positive impact on the growth of openness of national economies through a gradual and permanent elimination of trade barriers, and thus contributes to the free movement of goods across national borders. Thus, it strengthens the world trade. Globalization of trade leads to its liberalization, which brings internationalization, i.e. a massive entry of multinational retail chains into the national markets with a direct consequence of greater inflow of foreign goods to domestic shops. Although globalization generally increases the social well-being and leads to the economic growth of all participating economies, in terms of differences in the purchasing power of the population, it is gradually widening wage scissors. This way, the relative lower purchasing power of the population increases the pressure on individual producers to place products of lower quality on the markets.

How does globalization affect ways of eliminating double quality? Ethical behaviour of firms in globalized markets is becoming an important competitive advantage (Rolny & Lacina, 2008). Traditional advantages, such as cheap labour, access to raw materials, economies of scale, etc. are gradually losing their weight. Thus, new advantages are of great

importance, goodwill indisputably belongs to them. Companies placing their dual-quality products on the markets reduce their goodwill. Nowadays, the Internet, the press, the radio and television can very quickly disseminate information about the unethical behaviour of these companies. Therefore, if they want to increase their market value, they must build their good reputation in a long-term and systematic way. In terms of functioning of the market environment, globalization significantly increases sanctions of market competition. It helps effectively reduce the extent of asymmetric information, i.e. it informs customers of the companies and products of dual quality. It removes barriers to entry into the industry, and thus increases consumers´ options to choose products of higher quality. In terms of regulatory interventions in legislation, nowadays, globalization processes do not allow the developed European economies to construct their own autonomous legal norms, as globalization leads small European economies to become part of a larger global entity. Logically, the EU membership brings them obligation to adhere to the adopted EU-wide rules. An example of such rules is the proposed amendment to the Directive on the unfair commercial practices, which seeks, in a regulatory manner, to prevent placing of dual-quality products on the markets.

5. Conclusion

Globalization and global business activities significantly affect the existence of dual quality of food and drug goods in the old and new EU Member States. The opening of national economies of Central European countries, the internationalization of trade, the differences in purchasing power and the existence of market failures have helped to develop the dual quality. At the same time it holds true that globalization has a direct and indirect effect on the progressive reduction or elimination of that condition. Measuring the effectiveness of proposed solutions to eliminate double quality will be the subject of our further research.

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COMPARISON OF THE TAX BURDEN ON NATURAL AND LEGAL PERSONS IN THE SLOVAK REPUBLIC AND IN THE CZECH REPUBLIC IN GLOBAL ECONOMY CONTEXT

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Abstract. There are numbers of surveys mapping barriers in business that hinder the faster development of businesses and trade companies. Among the most frequently identified problems is the issue of financial burden. It should be seen as a collection of all mandatory payments that businesses must bear in carrying out their activities in order to meet its tax and levies or administrative duties. All these obligations significantly affect the financial side, which can ultimately decide on the success or failure of the business entity. Tax burden in the widest sense can be understood as the percentage of tax on the tax base. Tax policy and fiscal impact are related to the tax burden. The aim of the paper is to review some indicators of tax burden in selected countries, to give their basic characteristics and thus to outline the possible optimal tax system. The tax burden is part of any economic activity carried out by a natural or legal person and taxes form the most important part of the revenue part of the state budget. From the perspective of economic reality, the tax system also performs other functions. They are tools of economic policy that the government can influence the course and functioning of economic life. The tax system should be, in each country, set up with the aim to lead to the stimulation, growth and expansion of economic life.

Keywords: tax burden, natural person, legal person, tax system, tax

JEL Classification: G30, M40, M41

1. Introduction

The issue of taxes and levy of business entities is addressed by a broad professional community. This is a live and frequently discussed topic for the public. This issues can be observed from different perspectives, whether macroeconomic, microeconomic, environmental or managerial. A comparative comparison of the tax burden should be based on current Slovak legislation. By tax burden, we express the extent to which the tax system, or the tax on the basis of the applied economic or fiscal policy, drains the financial resources from the income of the tax entity.

2. Tax policy

State economic policy plays a major role in building and structuring the tax system of a particular country, in choosing the appropriate instruments and methods, tax principles and measures so that taxes serve to promote the economic, social and political goals of the state. Tax policy is linked to the use and application of taxes and their instruments, which serve to influence macroeconomic and microeconomic processes in the economy. The nature and tools of tax policy can be deduced from the applied economic policy of the state. The aim of tax policy is to apply tax principles and measures so that taxes serve to promote the economic, social and political goals of the state. (Hines, 2017; Duan et al., 2018; Banaszewska, 2018) Through the applied tax policy, the state can regulate inflows of foreign capital, promote employment, by applying appropriate tax instruments together with social policy instruments, so that the entity ceases to prefer to receive unemployment benefit and prefers a tax that is proportionate and takes account of further employment supporting facts (e.g. deductible tax base items, tax bonus, etc.).

Bielikova has divided tax systems into four major groups:
1. **Tax** *systems* **of advanced market economies** that result from the long-term development of the market economy, with knowledge of negative experience in tax practice as well.
2. **Tax systems of transforming economies** aimed at adapting the existing tax system to the desired changes in the wider economic environment.
3. **Tax systems of developing countries** that have their own specifics and target-motivated personalities but have many common features.
4. **Tax systems in tax havens** that are designed on the basis of generally advantageous tax conditions and other business benefits in the given territories (Bielikova, 2010).

Slovakia can be ranked in the second group by this categorization. The tax system, since the creation of the independent SR in 1 January 1993, was regulated by Act No. 212/1992 Z.z. on the system of taxes, which form the basis of the structure of the new tax system of the SR. A further reform of the tax system has taken place since 1 January 2004. The reform of the tax system has been adopted, which has increased transparency and systematism. An inheritance and donation tax has been abolished. A uniform 19% tax rate was introduced for the taxation of natural and legal person (NP, LP) revenues. At present, the tax system is being applied in Slovakia, which is a set of separate tax laws for individual taxes.

The tax burden on natural persons (NP) doing business in the Slovak Republic is increasing every year. The increase is shown in Figure 1.

Figure 1: Average annual income tax
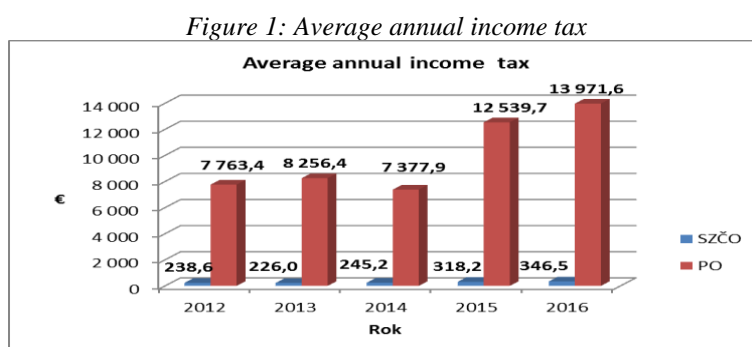
Source: (own elaboration)

Reasons for increasing public revenue from NP income tax may be linked to growth in the economy and increasing income of Self-employed persons (SEP), or even to a change in legislation when between 2011 and 2017, twenty one taxes and levies have been added or increased (eg bank levy, VAT has increased from 19 % to 20%, car prepayment tax, non-life insurance tax, gambling tax, etc.). The biggest increase was in 2015 when the average income tax was changed from € 245 to € 318. This may be the consequence of the amendment to the Income Tax Act where the definition of tax expenditures was supplemented by the character of personal consumption as well as the change in the state's depreciation policy, which led to an increase in the tax burden of NPs operating in the Slovak Republic. In the development of NP income tax, we can see an increase again in 2015. This increase is due to the introduction of tax licenses as well as the flat tax. The trend is growing, although in 2017 the tax rate was reduced to 21% compared to 2016 when it was 22%. In 2018, tax licenses were canceled.

3. Comparison of the tax burden of the natural and legal persons doing business in Slovakia

In the event of seeking legal tax optimization, an entrepreneur should consider the purposes of the cost of public health and long-term taxation before commencing economic activity:
*   choosing the right form of business,
*   selecting the method of applying the tax costs,
*   tangible assets and intangible assets depreciation method,
*   the possibility of tax relief,
*   the use of non-taxable items and deductible items from the tax base,
*   the possibility of applying the tax deducted as a tax advance (Bielikova, 2015).

Tax aspects of business of Self-employed persons:
*   The possibility of deciding on the application of the freelance and business-related expenditure in the area of services, if it is not a VAT payer, is the possibility to apply the lump sum 60% up to 20,000 €;
*   It is necessary to compare actual expenditure and flat rate;
*   Taxation on the principle of cash flow in accordance with valid tax legislation;
*   Lower logging costs and administrative burden;
*   The possibility of switching to the system of double-entry accounting;
*   Suitable for small entrepreneurs;
*   Progressive tax rate of 19% or 25% (so-called millionth tax);
*   Obligation to pay from income 14% (7%) health insurance;
*   Obligation to pay social insurance for income higher than € 5,724.

Tax aspect of business in the form of Ltd. (Company Limited), and Inc. (i.e. Incorporated, or PLC public Limited Corporation):
*   It is subject to income tax as a legal entity.
*   They keep double-entry accounting (accrual principle).
*   The tax rate is 21%
*   Income from dividends is taxed by shareholders (7% of States Parties, 35% non-contracting states).

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4. Comparison of the tax burden of the natural and legal persons doing business in the Czech Republic

Tax aspects of business of self-employed persons are listed as follows:
* The possibility of deciding whether to apply actual or lump sums,
* Allocation of lump-sum expenditure into several categories,
* The option to spend and expenses a year before starting a business,
* The possibility of applying more types of non-taxable parts and tax concessions,
* Taxation on the principle of cash flow in accordance with valid tax legislation,
* Lower logging costs and administrative burden,
* The possibility of switching to the system of double-entry accounting,
* Recommended to small entrepreneurs and the liberal professions,
* Progressive tax rate of 15% and 7% solidarity tax,
* Obligation to report on income and expenditure to Social and Health Insurance office (SHI).

The tax aspect of doing business in the form of Ltd. (Company Limited), and Inc. (i.e. Incorporated, or PLC public Limited Corporation) is outlined as follows:
* Subject to income tax as a legal entity,
* double-entry accounting (accrual principle);
* applying multiple types of deductions and amortization of loss in full,
* the tax rate of 19%;
* income from dividends (dividends) is taxed by shareholders (15%),
* reduced rate of 5% for investment funds (Psenkova, 2015).

5. Comparison of income tax in the Slovak Republic and the Czech Republic

When comparing the income tax of the Slovak Republic and the Czech Republic, it is clear that the individual systems are based on the same basis, but the gradual reforms of the tax systems and economic policies of the states they have changed. Jantosova says that in 2009, when the so-called "Equal Tax" was introduced, Slovakia was the best in competition with neighbouring V4 countries, ranked at 102, followed by Poland, the Czech Republic and Hungary ranked at 113, 122, and 124, respectively. Based on changes in Slovak tax legislation, the Czech business environment currently offers more favourable conditions for natural and legal persons. By stabilizing tax rates at 15% for individuals and 19% for legal entities in the Czech Republic, the country is more attractive for investors, and also with regard to other factors such as tax licenses for instance that were cancelled in the Slovak Republic in 2018. The comparison of the individual systems is summarized globally in the following tables. It can be seen in Table 1 that the tax loss can be humiliated in Slovakia gradually over 4 years, but in the Czech Republic at one time in full. In Slovakia, assets are considered to be long-term (LTA) if the service life exceeds 1 year and the cost is greater or equal € 1,700, and € 2,400 for tangible and intangible assets respectively. In the Czech Republic, the long-term aspect is the same, but the costs are different, the tangible assets must be obtained at the cost of at least 40,000 CZK and the intangible assets at the cost of CZK 60,000. (Hakalova, 2015)

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Table 1: Income tax comparison in Slovakia (SR) and the Czech Republic (CR)

Criterion	Slovak Republic	Czech Republic
Subject to tax	Income from the activity of the taxpayer from the disposal of property	Income from the activity of the taxpayer from the disposal of property.
Tax base	The difference between taxable income and expenditure	An amount that exceeds the taxpayer's income in excess of the proven expenditure incurred to achieve taxable income
Tax loss	Applied uniformly at one forth for a taxable period of four years	It is applied within 5 years of the full amount
Long-term asset	Tangible assets cost €1,700 Intangible assets cost €2,400	Tangible assets cost €1,519.41 (CZK 40,000) Intangible assets cost €2,279.12 (CZK 60,000)
Depreciation policy	1st group - 4 years 2nd group - 6 years 3rd group - 8 years 4th group - 12 years 5th group - 20 years 6th group - 40 years	1st group - 3 years 2nd group - 5 years 3rd group - 10 years 4th group - 20 years 5th group - 30 years 6th group - 50 years

Source: (own elaboration)

The depreciation policy is the same in terms of the number of groups, but the number of years of depreciation is different. Regarding income taxes, the depreciation policy of Slovakia is more favourable for assets included in the depreciation group 3 to 6, while for the assets in depreciation groups 1 and 2, the policy of the Czech Republic is more favourable.

Table 2: Comparison of flat-rate and non-taxable parts in Slovakia and the Czech Republic

Criterion	Slovak Republic	Legal person	Czech Republic	Legal person
Taxpayer	Natural person		Natural person	
Flat-rate expenses	60% uniform for all categories, up to a maximum of € 20,000	n/a	80% of farmers, forestry and aquaculture up to € 30,388.21 (CZK 802,000); 60 % trades up to € 22,791.16 (CZK 600K); 40 % other self-employment activities up to €15,194.10 (CZK 40K); 30 % of lease up to €11,395.58 (CZK 30K).	n/a
Non-taxable parts of TB	On taxpayer € 3,830.02; On spouse; On supplementary pension savings (max. €180); On spa cure (max. € 50).	n/a	Free delivery, Interest on a mortgage loan or other similar loan, Pension insurance, Life insurance, Membership and trade union contributions, Allowance to cover further education.	n/a

Source: (own elaboration)

From Table 2, it is seen that the Czech Republic offers several types of flat-rate expenditures compared to Slovakia, which is more favourable for the Czech Republic. The same could be said about non-taxable parts. There are four non-taxable parts of the Tax Base (TB) in the Slovak Republic but completely different from those of the Czech Republic. Non-taxable parts of the tax base are bounded above in Slovakia. The taxpayer can apply the non-taxable portion only if his annual tax base does not exceed € 19,948. In case of overcharge, the tax base is calculated according to the formula 8 817,016 – ¼ of Tax base. The second

non-taxable item is the non-taxable portion on the spouse. In this, the taxpayer's tax base together with the spouse's income is taken into account. The non-deductible portion for supplementary retirement savings is limited to a maximum of € 180 and a 50 € amount for spa treatment.

Table 3: Comparison in terms of tax bonus in Slovakia and the Czech Republic, (NP – Natural person, LP – Legal person)

Criterion	Slovak Republic		Czech Republic	
Taxpayer	NP	LP	NP	LP
Conditions for granting a tax bonus	Business earnings of 6 times the minimum wage €2,880.	n/a	Business earnings of 6 times the minimum wage € 2,780.52 (CZK73,200).	n/a
Tax bonus / tax benefit	€ 258.72 per year per child	n/a	€577.53 (CZK 15,204) on 1st child; €737.07 (CZK 19,404) on 2nd child; €919.40 (CZK 24,204) on 3rd child; € 919.40 (CZK 24,204) on each of the next child.	n/a
Obligation to file a tax return	Tax-able parts greater than 50 % of non-taxable parts of TB (€1,915.01)	Always	Taxable income higher than 569,78 € (15 000 CZK)	Always

Source: (own elaboration)

Slovak legislation uses the concept of a tax bonus and the child's parent can apply on every child equally € 21.56 per month until the child's 25th birthday if he/she lives with the parent in a household, and the child is constantly preparing for studies. In the Czech Republic, the tax benefit is applied by the taxpayer according to the number of children, which is gradually increasing. Conditions for granting a tax bonus/tax benefit are the same in both countries. In the case of obligation to file a tax return, there is a limit of € 1,915.01 in Slovakia, and CZK 15,000 in the Czech Republic.

Table 4: Comparison in terms of income tax in Slovakia and Czech Republic

Criterion	Slovak Republic		Czech Republic	
Taxpayer	NP	LP	NP	LP
Allowance on taxpayer	n/a, does not exist in Slovak legislative	n/a, does not exist in Slovak legislative	943,55 € on taxpayer (CZK 24,840), 943,55 € on spouse, if spouse's income is not greater than 2,279.12 € (CZK 60K)	n/a
Progressive taxation	Yes	No	Yes	No
Tax rate	19 % up to 35,268.06 €; 25 % over 35 268,06 €	21 %	15 % up to 51,475.20 €	19 % 5 %
Tax rate on dividends	n/a	7 % of Contracting States, 35 % of non-Contracting States	n/a	15 %
Solidarity tax increase	does not exist in Slovak legislative	does not exist in Slovak legislative	7 % of positive difference, TB > 51,475.20 €.	n/a

Source: (own elaboration)

In the Czech Republic, the taxpayer must receive 90% of the income from the Czech Republic in order to claim the tax benefit. In Slovakia, the taxpayer can apply for the tax

bonus regardless of the origin of the income, i.e. he/she may also have income from abroad, and Slovak taxpayer working in the Czech Republic can apply for a tax bonus/benefit twice – once in the Slovak Republic once in the Czech Republic. The Czech taxpayer is not allowed to do so (Paliderova, 2016). Both countries apply progressive taxation. In Slovakia, the tax rate for natural persons is limited by the tax base. 19% tax is on tax-able income up to 35,268.06 €. If the taxpayer obtains a higher income, his income is taxed at a higher rate, i.e. 25%, which is colloquially named "millionaire tax" in Slovakia. The Czech Republic has a tax rate of 15% for natural persons if taxpayer's income does not exceed 51,475.20 €. In case it exceeded, the income is subject to a solidarity increase of 7%, i.e. the income will be taxed at 22% of the tax rate. Legal entities in the Slovak Republic are taxed at 21%, while in the Czech Republic only 19%. When paying dividends, the Czech Republic is subject to 15% rate, and only 7% in Slovakia, i.e. a Czech entrepreneur will pay more than a Slovak entrepreneur to the state (Paliderova, 2016).

6. Conclusion

From the perspective of macroeconomic indicators, we can assume that the tax burden on legal entities is higher in Slovakia than in the Czech Republic. In terms of self-employed persons, the tax burden in the Slovak Republic is lower than in the Czech Republic. Tax burden on the entrepreneur, whether in the Czech Republic or in the Slovak Republic, is affected by several aspects, such as:

- legal form of business,
- the capital structure of the enterprise,
- the business sector,
- bookkeeping system,
- the possibility of applying tax advantages,
- application of tax loss, deductible items from the tax base,
- the life cycle of the business,
- depreciation policy for long-term assets,
- costs associated with administrative activity,
- bureaucracy and legislation in that country.

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STRATEGIC POSITIONING OF TERRITORIES IN THE GLOBAL ECONOMY: BRAND DEVELOPMENT IN ACCORDANCE WITH THE MATRIX OF COMPETITIVENESS OF TERRITORIES

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Abstract. There is a developed market of territories in today's global economy, where the profitability of economic objects is determined not only by their internal factors, but also by their location and their relationship with an attractive territorial formation in a certain temporal perspective, and their perception by a potential audience. There is a need to identify mechanisms for assessing and comparing areas, as well as the prospects for their chosen positioning strategy. The article is devoted to the strategic positioning of territories in the global economy in accordance with the matrix of competitiveness which is based on the choice of brand priorities for specific types of social, economic and technological factors positioning (SET-factors) for the modified Cagan-Vogel breakthrough positioning model. The paper shows the mechanism of competitive positioning of the brand territory using the competitiveness matrix of the territory, the perspective type of its strategic positioning is determined depending on the complex of dominant brand attributes and the severity of these or other SET factors. The paper concludes that the choice of a specific type of positioning strategy requires the use of different types of social, economic and technological factors of brand development and their alignment with the most important attributes on which the competitive dominance of the brand is built. The results of the study can be useful in analyzing regional development programs and developing measures to improve the competitiveness of the territory.

Keywords: breakthrough positioning model, strategic positioning of territories, brand territory, competitiveness

JEL Classification: M31, O18, R58, Z10

1. Introduction

The modern world is a world dominated by imperceptible assets: human capital, image, brand. The role of such assets in the economy is enormous, not only in traditional areas, but also in areas where competition seemed impossible 20 years ago. So, there is a developed market of territories in the modern world, where the profitability of economic objects is

determined not only by their internal factors, but also by their location and their interrelation with an attractive territorial formation in a certain temporal outlook, as well as their perception by a potential audience («country as brand» according to the expression of "marketing guru" Philip Kotler and David Gertner (Kotler & Gertner, 2002)). That is why the problems of territory development and branding of the territory are in the focus of modern theory. These issues are dealt with the work of Simon Anholt (Anholt, 2009) and Robert Hovers (Govers & Go, 2009), analysing the creation of the brand, its identity and personality, the work of Evan Potter (Potter, 2009), Keith Dinney (Dinnie, 2011), Eli Avraham and Evan Ketter (Avraham & Ketter, 2012), in which the issues of branding and promotion of the brand of the territory are discussed, and, finally, the monograph of Ari-Vekko Antiroko (Anttiroiko, 2014), where this issue is generalized at the political economic level. We also note the emerging interest in the branding of seats by state authorities in various countries interested in promoting the brand to enhance the competitive status of the territories, attracting capital to different cities and territories to stimulate economic growth. (Govers & Go, 2009; Korhonen & Lyakin, 2017; Baulina & Klyushin, 2017) Note that interesting studies related to the promotion of the brand territories refer to countries with very different levels of economic development. Brands of well-known places can be promoted in the leading countries and the countries-outsiders of the European Union. Residents who have strong brand associations not only have brand loyalty develop, but they are becoming "part-time marketers" supporting and promoting the brand. Territory branding can also be seen in the context of social policy. (Altunyan & Kotcofana, 2016; Lyakin & Benson, 2016; Kliestik, & Dengov, 2015).

Unfortunately, marketers often ignore the complexity of branding places: they focus on the description of brands and propaganda, but not on their proper conceptualization. Consequently, there is a need to identify mechanisms for assessing and comparing areas, as well as the prospects for their chosen positioning strategy.

2. Strategy of the breakthrough positioning of the territory

The choice of the positioning strategy of the territory can determine its effective development in the long term. However, if some factors of territory positioning, in particular, the factors that block the so-called SET-gap, are not taken into account, ensuring the success of breakthrough positioning of territories, in accordance with the matrix of "design technology" introduced by Jonathan Cagan and Craig Vogel (Cagan & Vogel, 2013), the development strategy of the territory may not have a pronounced effect. Moreover, incorrect positioning of the territory for a number of key attributes of the SET-gap can lead to the failure of the chosen strategy and the weakening of the competitive position of the territory in the global market, and even to the complete lack of interest from all possible potential consumer groups in the given territory. It should be noted that interest in territory branding should be based on a clear notion of not only the factors that change the brand (and the possibilities of manipulating these factors), but also the influence of these factors on brand equity. Indeed, creating and promoting the brand of the territory there are problems that have both a theoretical and practical focus, as a result of which this process leads to economically insignificant results (at best), and even negatively affects the competitiveness of national products and generates many new problems, instead of solving them. SET-gap occurs when there is a simultaneous "break" in 3 areas: society (S-social), economy (E-economic) and technology (T-technological), it is its overcoming and enables the use of breakthrough

strategies (Cagan & Vogel, 2013). Thus, it is necessary to consider in detail which factors of the SET-discontinuity it is necessary to emphasize with the chosen method of the territory positioning. The choice of a concrete combination of SET-factors will allow to determine exactly how certain attributes of a brand of a territory or a specific city should be positioned.

In this case, we will consider the classification of territories in accordance with the matrix of "design" technology, which implies the identification of four main types of positioning strategies: generic, kitsch, high-tech territory and breakthrough. Considering cities whose brands are positioned in accordance with the positions of this matrix, it should be noted that different competitive positions of cities in selecting a priority strategy for the development of the brand may have a significantly different semantic value. Therefore, proceeding from different types of positioning, and relying on different SET factors, it is possible to achieve more or less stable position of the brand of the territory and to reveal the prospects for creating a strong brand of the city, depending on the predominance among its attributes of one or another set of SET factors. So, cities whose brand is positioned as a generic one, it is necessary to carry out the promotion proceeding from the social and economic component, since the technology factor for them is practically insignificant. Note that in this case, the economic policy of the state can be actively used for promotion. (Kliestik & Dengov, 2015; Gregova & Dengov, 2015; Kliestik et al., 2018) More precisely, the technological component of the brands of these cities is usually already well-developed and typical for the cities of this group. Cities, whose brand is positioned as a kitsch, promotion will be based on the priority of social and technological factors. Here, on the contrary, the economic component has already been worked out in some way, since it determines the city's belonging to a given group of cities. Without the high brand value, this city will not only not dominate the global environment, but it will not be able to achieve any degree of fame. Cities, whose brand is positioned as a high-tech, the emphasis on promotion should be made on the social and economic components, as the technology factor determines the involvement of these brands in this group. The innovative component plays an enormous role in the promotion. (Anholt, 2009; Tulyakova, Gregova & Dengov, 2017) In the absence of a correct state policy for the development of both small (Gregova & Dengov, 2016; Volkova et al., 2017) and large business. (Korostyshevskaya & Urazgaliev, 2016; Altunyan & Kotcofana, 2016; Stazhkova et al., 2017)) Therefore, with further advancement, it may be less significant. For breakthrough cities brands, the emphasis should be on economic and technological components, since social lies at the base of their active marketing strategy. Note that this statement is true not only for modern cities. An excellent example of the positioning of Delphi in Ancient Greece is given in his article by D.N. Stchastlivaya (Schastlivaya, 2014). Thus, the social factor ensures the "stylistic uniqueness" of the breakthrough brand and gives it the opportunity to stand out in a global environment. However, to achieve a leading position in accordance with this strategy, a breakthrough brand can only by focusing on the economic and technological components. In fact, this means that a breakthrough brand should be created not only "from above" but also from below: in practice, this can be realized with the help of the concept of "kidnapping" the brand by its target audience, proposed by Alec Wipperfurth (Wipperfurth, 2008). As a result of this presentation of the SET-break characteristics, the application of standard methods of market positioning of city brands, for example, the GE / McKinsey methodology, will give a different picture of the representation of dominant and losing positions for different types of city brands. Indicators of competitiveness and attractiveness of the brand will take into account the social and economic orientation of the city for generic

brands. For these brands, the area corresponding to the No. 1 winner by the McKinsey matrix can be called a "star", similar to the BCG matrix. This area will correspond to the leadership of the city brand in the global environment achieved by typing the main attractive factors of delirium and creating the most comfortable conditions for potential tourists, businessmen, residents and investors of the city who, with other things being equal, will be more convenient and cheaper to carry out business, make investments in this city.

Frankfurt am Main is an striking example of the generic leader, whose historical and cultural environment largely loses even to many nearby German cities. There are places of interest in the city, but again there are not so many compared to other German cities, none of which is below the level of the world's cultural heritage. The skyscrapers of Frankfurt are unequivocally inferior in number, variety and height to the skyscrapers of Dubai or Hong Kong. However, the city has created a comfortable environment for life and business activity, the city has a well-developed tourist infrastructure, it is convenient as a place of transplantation and an operational base for various routes throughout Europe. Investment projects implemented in the city are attractive with good reasonableness, profitability and convenience for investors. As a result, among other cities with a typical environment, many choose Frankfurt just for its convenience and good organization of escort. Moreover, the promotion of the Frankfurt brand is mainly aimed at the cosmopolitan orientation and social equality of people who somehow visited or reside in the city. The city offers a cheap, comfortable and affordable all-time pastime and an economical comfortable business environment, and it is these dominants that are emphasized when promoting its brand. Such a brand leader is able to keep in this position due to comparative cheapness and convenience of the city, as a temporary point of stay, residence or operations. The "cash cow" is a good option for developing a promotion strategy for this type of brand, as such cities will be visited for a long time by people with more conservative consumer preferences or as an operating or business base. This type of market position replaces winner # 3 in the classic McKinsey matrix. The "successful fashion brand" position as a market position suggests that the city was able to integrate into the existing strong trend. The position will provide leadership at the expense of low costs of brand consumers as long as there is a demand for the main trend. The city's position "a cow for an hour" assumes that it is visited or referred to by old memory, but the very attractiveness of the city is short-lived, which does not allow the city to achieve a sustainable competitive advantage. For a while, the brands of such cities will bring in revenue, like "cash cows", the income for them will exceed the cost of developing and promoting the brand, but this time interval may be short-lived. "Those who join the fashion" are focused on economic benefits for consumers of the city brand visiting or living in a city that has fallen into the current fashion trend. However, the position of such cities is as stable as fashion is. At the same time, the position of the former is slightly better than the second, but the attractiveness of both these brands can only be considered in the short term. The positioning matrix will be different for high-tech brands of cities. There are cities for which the high level of technology development is the determining factor, therefore, with the right technological positioning of the city and choosing its main target audience, it is able to take a leading position in the global environment among other technology brands. Such properly positioned technology brands in cities are consistently following the stages of the "wild cat" and "niche star", and are able to achieve a leading position and become a sustainable technological "star", for example, an example of which is Silicon Valley. "Wild cat" is a resource invader in this interpretation, as well as similar brands in the BCG matrix. These

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brands require a huge amount of money to promote and conduct various promotional activities that promote technology products and the city in which they are created as a leader in the technology sector. At the same time, the results of these events at the stage of promoting the city, its technological products and technological enterprises are not clear and, consequently, high investment risks. If the chosen promotion strategy proves successful, then the "wild cat" can become a "niche star". In the case of high-tech brands, a young star, corresponding to a leading position but high costs for maintaining the brand, will be the leader on some consumer segment, whose needs the city is able to satisfy to the maximum extent. In the event that this city can create a global brand and lead the technological sphere in the world, it will become a "star" in the classical sense and will be the most attractive for investors and attractive to all groups of consumers of the technological brand of the city. A star with reduced brand appeal and a weakening of attention to technological attributes of the city can provide a transition to the position of a "cash cow", which for a certain period will bring sustainable profit to the city, exceeding the cost of maintaining it. In fact, a "cash cow" for high-tech brands of cities is a niche position. This city is visited, conduct its business operations in it or invest in its projects exactly those consumers of the brand of the city who understand the value of its technological differences. Perhaps, investments in the brand of this city are carried out because it has some convenient qualities (for example, Shanghai in relation to the Silicon Valley or in relation to Cambridge in the USA, where the Massachusetts University of Technology is located). Investments in such brands of technology cities are very selective. A "cash cow for an hour" is a joined to the technology leader already at the stage of weakening the attractiveness of his brand, i.e. the strategy of a technological (innovative) leader is copied at a time when the technological leadership of the city is no longer entirely uncontested. In this case, the city uses good ideas for technological advancement and does not spend efforts creating its own technological identity, copying the strategy of a technology leader whose identity is itself itself in doubt. In this position, the brand can bring its creators or investors an acceptable profit for a not very long time, since the attractiveness of the chosen technological attribute is already damped. However, the brands of these cities can be successfully positioned as generics, and in some cases as brands, in whose attributes the technological component is only imaginary. In this case, positioning a city in another category can be much more successful, and its position is more long-term. Note that the brands of cities that fall into at least two positions (Jesting brand and Loser No. 2) can be quite an interesting fate: from high-tech brands by copying the effective strategy of a technology leader brands of these cities can move to winning positions as a brand -generic or brand-kitsch. For brands of cities in the "kitsch" category, the positioning matrix will have several distinct positions. A "Wild Cat" for this group is a city whose brand idea has already been formed and all the prerequisites for the development of a global brand in this city are available, but actually the promotion or development of the brand of this city has not yet been implemented. Such cities do not have significant technological attributes, but the novelty of their brands lies in the concept of representing the city, highlighting its exclusive qualities. Such a city will be presented in a non-typical way. Investment projects of such cities can be highly profitable, although, probably in a short period. If the idea of promoting the brand of the city works, then this city can become a "young star", i.e. his brand will begin to lead in a certain segment of the global market for territories, as a result, this city has a certain share of admirers, it becomes fashionable in certain circles. If the city goes into wide fashion with the exalted public, then it has every chance to become a classic star. When such a star loses its market attractiveness, it is almost impossible to keep its position in the global market of

territories. Very many cities that have ever been fashionable, lost their appeal, have become for most potential consumers simply a place on the map, even if there are pronounced attractive differences. The influence of social factors can negatively affect the project, and, unfortunately, the mechanism of unfavorable selection begins to develop actively. (Kliestik & Dengov, 2015; Dengov & Gregova, 2015) Such cities may have problems with spatial identity (as noted, for example, by Michalis Kavaratsis and Mary Yo Hatch (Kavaratzis & Hatch, 2013) or with the discrepancy of the target audience of brand identity (as emphasized by Sebastian Zenker and Suzanne Beckmann (Zenker & Beckmann, 2013). Many cities, striving for global leadership, take on the leader-kitsch strategy. As a result of the successful use of this strategy, there is a "cash cow for an hour", a brand of the city that is able to generate resources for a short period of time, while the fashion for the primary brand exists. A "cash cow for an hour" is positioned on a slightly different consumer audience, but with the old idea, though the success in this position is short-lived. In the event of further loss of market attractiveness or a decline in the competitive status, the brand-kitsch falls into the "transition" groups, which are themselves unstable. These cities need a new marketing idea or a significant brand correction. If these cities can not be promoted to the leading zone, then their brands will go to the losers area, which for brands means a complete collapse of their branding idea. The matrix will also be very different from those already considered for breakthrough brands of cities. The difference between the positioning matrix for a city developing a breakthrough brand is, first of all, that it has more losing positions, which, when implementing another strategy, could provide some success. Thus, positioning in a breakthrough cluster is in itself more risky. A city seeking to create a breakthrough brand, if unable to close the SET-gap, becomes absolutely insecure in the global market of territories. The position of a "wild cat" in this case is replaced by "latent or failed breakthrough", which means a breakthrough idea of promotion and technological (innovative or socially-demanded) attributes of the city's brand. In principle, a situation is possible when the breakthrough idea itself is chosen incorrectly. If the idea was consistent, the city can create a strong brand and become a "breakthrough leader", but this will happen only when the SET-gap is completely closed. With a certain "slack" of the individual attributes of the brand, it becomes "pseudo-breakthrough" (as happened with Ares and Lajes, who were spontaneously positioned as the location of cosmodromes for receiving aliens and unexpectedly became attractive tourist destinations). Pseudo-innovation brands often fall into the position of "pseudo-breakthrough", because with a lack of novelty technological attributes of the brand can not provide a SET-gap in all three areas (Volkova et al., 2017). The weakening of the attractiveness of the breakthrough brand will mean the transition to the field of "pseudo cash cows", which for the outside world seem highly attractive, but in fact maintaining their brand at a high level requires constant significant costs. Thus, the brands of such cities bring much less significant income to the city, and for maintaining the influx of tourists or businessmen in the city, we constantly have to contend with other attractive destinations, and these costs do not justify themselves. "Cash cows for an hour" are brands of competitors who are trying to join the seemingly attractive branding strategy, which is actually losing its relevance, therefore, the operation of this position is short-lived and not very effective.

3. Conclusion

Thus, taking into account the real characteristics of positioning the territory in the process of forming a strategy for developing its brand and implementing a competitive strategy will

avoid misinterpretation of its individual attributes and the choice of an untenable way of positioning. Using the proposed tools for positioning the territories will allow choosing for a particular city with its promising attributes of the brand the positioning method that will provide it with the greatest attractiveness in the global market of territories.

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DISPARITIES IN DEVELOPMENT IN THE LIGHT OF TAXONOMIC RESEARCH – EVIDENCE FROM SELECTED WESTERN HEMISPHERE COUNTRIES

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Abstract. Economic development is a broad category, which includes both quantitative changes expressed by indices of economic growth and qualitative changes in socio-economic structure of a country. Economic development is considered a key category describing economic structure of contemporary world economy. Improvement of life quality constitutes one of crucial development challenges. Economic development is determined by numerous economic and non-economic, internal and external factors. In literature, one can find discussions regarding stimulants and barriers of economic development, as well as development disparities and the ways adopted for their measurement. The problem of possible ways and methods of overcoming negative effects of 2008+ crisis arouses considerable interest of researchers. The main aim of the paper is to study disparities in development of eleven Western Hemisphere countries (selected by population and territory). The economic development of the following economies was analysed: Argentina, Bolivia, Brazil, Chile, Ecuador, Canada, Colombia, Mexico, Peru, United States of America and Venezuela. Due to the fact that economic development is a complex category, many elements had to be taken into account during the comparative study (the following diagnostic variables were taken into account: GDP growth, GDP per capita, service sector in GDP creation, inflation rate, unemployment rate, budget deficit, general government gross debt, infant mortality rate and life expectancy. Selected taxonomic methods were used, and in particular classification and hierarchization methods. Multidimensional comparative analysis resulted in identification of economies in the best economic condition and the worst one, moreover, the analysed countries were classified in terms of economic development.

Keywords: development, taxonomic research, Western Hemisphere, multivariate comparative analysis

JEL Classification: O11, C38, O57

1. Introduction

The main problem of this article is the exploration, evaluation and diagnosis of disparities in development of selected Western Hemisphere countries. The main objective of research was to study, explore and evaluate disparities in economic development of eleven Western

Hemisphere countries (selected by population and territory[9]). The economic development of the following countries was analysed: Argentina, Bolivia, Brazil, Chile, Ecuador, Canada, Colombia, Mexico, Peru, United States of America and Venezuela. Due to the fact that economic development is a complex category, many elements had to be taken into account during the comparative study. The following nine diagnostic variables were taken into consideration: X_1 - GDP growth, X_2 - GDP per capita, X_3 - service sector in GDP creation, X_4 - unemployment rate, X_5 - budget deficit, X_6 –life expectancy, X_7 - infant mortality rate and X_8 – inflation rate. All diagnostic variables were divided into two groups: stimuli and destimuli. X_1, X_2, X_3 and X_6 were considered stimuli, while X_4, X_5, X_7 and X_8 were treated as destimuli. It is important to note, that because of the complexity of a category of economic development a set of variables (not just one variable) should be used for analysis and surveys. However, the number of variables depends on the scope of research. Sometimes lack of statistical data results in reducing the initial set of variables. One can also talk of a sort of freedom of selection of variables by researchers. Research was conducted for the year 2017. Statistical material provided by Central Intelligence Agency and taken from the Word Factbook was used for the analysis. Additionally, the analysed eleven economies were compared in terms of their competitive positions according to the Global Competitiveness Reports published by World Economic Forum.

2. Methods

The research tools used in the article included literature studies, descriptive analysis and taxonomic analysis. Due to a complexity of a category of economic development, selected taxonomic methods were applied. Research was conducted with the application of Z. Hellwig's method of taxonomic measure of development as well as standard deviations' method. Z. Hellwig's method of multivariate comparative analysis made it possible to make a hierarchy of the analysed subjects, i.e. eleven Western Hemisphere economies, in regard to synthetic measure of economic development. After selecting the set of diagnostic variables, the character of each of the variables was determined. Variables were standardized and development model was constructed – a model unit, where diagnostic of variables were determined according to the rule, where:

$$z_{0j} = \max_i (z_{ij})$$

for stimuli or   (1)

$$z_{0j} = \min_i (z_{ij})$$

for destimuli.

The distance of i-unit from the development model was calculated using Euclid's measure:

$$d_{oi} = \sqrt{\sum_{j=1}^{m} (z_{ij} - z_{oj})^2}$$ (2)

Taxonomic measure of development (TMD) was calculated according to the formula (Hellwig, 1968; Nowak, 1990):

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[9] Western Hemisphere includes 32 countries of both North America and South America. The current article focuses on eleven economies selected mostly by population and territory.

$$\text{TMD}_i = 1 - \frac{d_{oi}}{d_o} \ , \ i=1,2,...n \tag{3}$$

where:

$$d_0 = \bar{d}_o + 2S_0 \tag{4}$$

and:

$$\bar{d}_0 = \frac{1}{n}\sum_{i=1}^{n} d_{oi} \tag{5}$$

$$S_0 = \sqrt{\frac{1}{n}\sum_{i=1}^{n}(d_{oi} - \bar{d}_o)^2} \tag{6}$$

while: $\text{TMD}_i \in [0; 1], i=1, 2, ...n.$

Finally, the analysed subjects were put in order according to the level of development expressed by taxonomic measure of development (TMD). Additionally, the implementation of cluster analysis for the research resulted in grouping of the analysed subjects – eleven Western Hemisphere economies – in four clusters according to the level of economic development measured by TMD. A selected method of grouping of linearly ordered objects, and in particular, method of standard deviations was used for this purpose. Eleven Western Hemisphere economies were divided into four clusters, according to the following rule:

$$G_1 : s_i < \bar{s} - S(s),$$
$$G_2 : \bar{s} > s_i \geq s_i - S(s),$$
$$G_3 : \bar{s} + S(s) > s_i \geq \bar{s},$$
$$G_4 : s_i \geq \bar{s} + S(s),$$

where: $\bar{s}$ - arithmetic mean of synthetic variable (in this study: arithmetic mean of TMD), while $S(s)$ - standard deviation of synthetic variable (in this study: standard deviation of TMD), s_i - value of the synthetic variable of the object i (in this study: TMD value in i Western Hemisphere economy).

3. Results

Table 1 presents the input data used for the analysis, as well as the results of the process of input data sorting.

Table 1: Input data and results of input data sorting

Economy	Input data								Input data sorting							
	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8
Argentina	2.5	20700	60.9	8.1	6.1	77.3	9.8	26.9	4	4	7	8	9	4	4	10
Bolivia	4.2	7500	54.1	4.0	6,2	69.5	35.3	3.2	**1**	**11**	**11**	2	10	**11**	**11**	6
Brazil	0.7	15500	72.8	13.1	1.1	74.0	17.5	3.7	9	6	2	10	**1**	9	9	7
Chile	1.4	24600	64.3	7.0	3.1	78.9	6.6	2.3	8	3	4	7	5	3	3	4
Ecuador	0.2	11200	59.7	5.1	5.5	77.0	16.4	0.7	10	10	8	4	8	5	8	**1**
Canada	3.0	48100	70.2	6.5	2.0	81.9	4.5	1.6	2	2	3	5	3	**1**	**1**	2
Colombia	1.7	14500	61.4	9.3	3.3	75.9	13.6	4.3	7	7	6	9	6	8	7	8
Mexico	2.1	19500	64.0	3.6	1.9	76.1	11.6	5.9	6	5	5	**1**	2	6	5	9
Peru	2.7	13300	56.1	6.7	2.8	74.0	18.4	3.2	3	8	10	6	4	9	10	6
United States	2.2	59500	80.2	4.4	3.4	80.0	5.8	2.1	5	**1**	**1**	3	7	2	2	3
Venezuela	-12.0	12400	57.4	26.4	38.1	76.0	12.2	652.7	**11**	9	9	**11**	**11**	7	6	**11**

Source: (CIA, The World Factbook 2018 and own calculations)

Table 2 presents the results of research with the application of Z. Hellwig's method of taxonomic measure of development (TMD). TMD ranged from 0.918 in the case of the United States (the unquestionable leader in regard to economic development among the eleven studied Western Hemisphere countries) to 0.127 for Venezuela (the least developed one). The top-three group included also Canada (TMD for Canada equalled 0.839) and Chile (with TMD amounting to 0.666). It is worth mentioning here that TMD for Venezuela represented less than 14% that of the United States. The top position of the United States resulted from several elements, namely: its 1st place in terms of GDP per capita PPP (59500 Int. \$) and the highest share of service sector in GDP creation (80.2%), as well as the 2nd lowest infant mortality rate (5.8 per 1000), the 2nd highest life expectancy (80 years) and the 3rd lowest inflation rate (2.1%). On the other hand, Venezuela's last position in regard to synthetic measure of development expressed by TMD resulted from the very last place of this country in terms of GDP dynamics (minus 12%), the highest unemployment rate (26.4%), the highest inflation rate (hyperinflation amounting to 652.7%) and the highest budget deficit (38.1%).

Table 2: Synthetic measure of economic development of Western Hemisphere countries (TMD)

Position	Economy	TMD
1	United States	0.918
2	Canada	0.839
3	Chile	0.666
4	Mexico	0.607
5	Argentina	0.598
6	Colombia	0.547
7	Brazil	0.547
8	Ecuador	0.525
9	Peru	0.467
10	Bolivia	0.275
11	Venezuela	0.127

Source: (Own calculations)

Additionally, standard deviations' method of linearly ordered subjects' classification was applied in order to group eleven Western Hemisphere countries into classes (according to the level of their economic development). As a result, the studied eleven countries were grouped into four classes, where class G4 included countries with the highest TMD (TMD of amounted to at least arithmetic mean of TMD plus standard deviation of TMD), and class G1 included economies with the lowest TMD (for those economies TMD was lower than arithmetic mean of TMD minus standard deviation of TMD). The results of analysis with the application of standard deviations' method of classification of linearly ordered subjects for the year 2017 are presented in table 3.

In 2017 there were only two countries in class G4, i.e. the United States of America and Canada. The next class, i.e. G3, was formed by three economies, namely: Chile, Mexico, and Argentina. Class G2 embraced four countries, in that: Colombia, Brazil, Ecuador and Peru. Class G1 was formed by two economies with the lowest level of synthetic measure of economic development TMD, namely: Bolivia and Venezuela.

Table 3: Division of Western Hemisphere countries into classes according to synthetic measure of economic development (TMD)

Position	Economy	Class
1	United States	G4
2	Canada	G4
3	Chile	G3
4	Mexico	G3
5	Argentina	G3
6	Colombia	G2
7	Brazil	G2
8	Ecuador	G2
9	Peru	G2
10	Bolivia	G1
11	Venezuela	G1

Source: (Own calculation)

The achieved results were compared to competitive positions of the analysed countries in the Global Competitiveness Reports published by World Economic Forum (see table 4). The United States of America was positioned on the 2nd place in 2017/2018 ranking and it also took the 2nd position in 2009/2010 ranking. Canada took the 14th position in 2017/2018 ranking (in the 2009/2010 edition it was positioned even five places higher). Chile was classified as the 33rd most competitive economy in 2017/2018 ranking and as the 30th one in 2009/2010 ranking. Moreover, Venezuela took the lowest position in both 2017/2018 ranking and in 2009/2010 ranking of all eleven studied Western hemisphere countries (it was classified as the 127th economy in 2017/2018 and as the 113th one in 2009/2010). That means strong correlation between the results of Author's taxonomic analysis with the WEF's rankings.

Table 4: Global competitiveness index of Western Hemisphere countries

Economy	2009/10	2017/18	2017/2018-2009/10 change	Economy	2009/10	2017/18	2017/2018-2009/10 change
Argentina	85	92	-7↓	Colombia	69	66	+3↑
	3.9	3.9	0.0		4.0	4.3	+0.3
Bolivia	120	121*	-1↓	Mexico	60	51	+9↑
	3.4	3.5*	+0.1		4.2	4.4	+0.2
Brazil	56	80	-24↓	Peru	78	72	+6↑
	4.2	4.1	-0.1		4.0	4.2	+0.2
Canada	9	14	-5↓	United States	2	2	0
	5.3	5.3	0		5.6	5.8	+0.2
Ecuador	105	97	+8↑	Venezuela	113	127	-14↓
	3.6	3.9	+0.3		3.5	3.7	+0.2
Chile	30	33	-3↓				
	4.7	4.7	0.0				

*- Bolivia was excluded from GCI 2017-2018 due to insufficient data, therefore in here GCI for Bolivia for 2016-2017 was presented

Source: (The Global Competitiveness Report 2017–2018, WEF, Geneva 2017; The Global Competitiveness Report 2009–2010, WEF, Geneva 2009)

4. Discussion

There have been many studies – both theoretical and empirical – focusing on development – its elements and layers, factors and barriers (Todaro & Smith, 2015; Perkins, 2016; Lowe & Feldman, 2018; Lavopa & Szirmai, 2018; Venables, 2016; Attanasio & Pistaferri, 2016; Arampatzi, Burger, Ianchovichina et al., 2018; Tang & Tang, 2018). Giugale concentrated on the influence on globalization and democratization on economic development (Giugale, 2017). The relations between regional economic integration processes and economic development were discussed by Pawlas (2014, A).

Nafziger studied the reasons for rapid recent development in India, Poland, Brazil, China, and other Pacific Rim countries (Nafzinger, 2012). Heshmati analysed economic development of selected African countries (Heshmati, 2017). Wamboye and Tiruneh focused on the impact of foreign capital on economic development of African countries (Wamboye & Tiruneh, 2017). The 21st century brought considerable interest in the concept of sustainable development, which was strongly promoted by the United Nations (Browne, 2017; Donoher, 2017; Hackl, 2018).

Taxonomic methods have been applied for the evaluation on economic development by Pawlas (Pawlas, 2014, B; Pawlas, 2017), Mlodak (Mlodak, 2006).

However, that there is a gap in recent literature regarding the assessment of disparities in development among Western Hemisphere countries with the implementation of taxonomic methods (multivariate comparative analysis). Therefore, the undertaken research has filled in the existing gap.

5. Conclusion

The position of national economies in a globalised world economy is strongly related to the level of its economic development. More developed economies build stronger international relations, while countries characterised by lower level of development are usually less internationalised. One of crucial objectives of pro-development activities and policies is the need to find ways of lifting people out of poverty and to transform the existing patterns of inequality. Moreover, a higher economic development constitutes an important element of higher competitiveness.

The undertaken research focused on economic development of selected eleven Western Hemisphere countries. The analysis did prove the persistence of huge development disparities among Western Hemisphere countries. In 2017 the highest level of synthetic measure of economic development was noted in the United States. Among the leading economies in terms of synthetic measure of development one could also find Canada and Chile. The lowest position was taken by Venezuela. Bolivia was another economy with a relatively low level of development measured by synthetic TMD index. What's more, the achieved results of the study with the application of selected taxonomic methods did fall in line with competitive positions of the analysed Western Hemisphere countries presented by World Economic Forum in the Global Competitiveness Report 2017/2018. The United States was classified as the 2nd most competitive country in the world (the highest one of all eleven studied countries). Canada and Chile were next two Western Hemisphere countries characterised by a relatively high competitiveness (Canada took the 14th position and Chile was positioned on the 33rd

place). On the other hand, Venezuela and Bolivia, i.e. those Western Hemisphere countries which were considered the least developed ones according to TMD, were also classified as the least competitive economies among the studied Western Hemisphere countries (they took the 127th and 121st positions respectively).

When it comes to the limitations of the study, one should consider both the number of analysed objects, the set of diagnostic variables, as well as the period of research. Future research could embrace more Western Hemisphere countries and a longer period of time. One could also point out to the possibility of analysing a number of fields, e.g. economic potential, demographic potential, labour market, technical and technological infrastructure. Unfortunately, due to the limited scope of the article (resulting from the requirements of the conference publication), it was not possible to include more elements in the current research. Moreover, some limitations were connected with the lack of statistical data for all analysed Western Hemisphere countries or the analysed year (e.g. initially it was planned to use two additional diagnostic variables, namely: R&D expenditure as % GDP and number of granted patents by US Patent Office; unfortunately, those statistical data were not available for 2017 for all analysed 11 countries).

Acknowledgment

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SEARCH FOR EQUILIBRIUM OF NEGOTIATING POWERS IN BUSINESS NEGOTIATIONS UNDER CONDITIONS OF GLOBALIZATION (CASE OF MONOPSONY)

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Abstract. When market competition is more or less distorted, business negotiations face certain challenges. This can happen in various market conditions. Distorted competition affects the balance of negotiating power between negotiating parties and, eventually, the outcome of negotiations. This often affects both buyers and sellers. Such situations open great opportunities for international business relations as new market participants can create additional alternatives for companies and organizations or other business entities by reducing the negative impact the distorted competition makes on the balance of negotiating power between negotiating parties. The assessment of the negotiation powers of the negotiating parties is crucial for the development and implementation of effective international business negotiation strategies in order to make the best use of the negotiation potential — the negotiating power. The object of the research is the search for balance of the negotiating powers at international business negotiations under distorted market competition. The scientific problem is that negotiation theory lacks measures to assess and balance the negotiating powers of negotiation participants under distorted market competition. The goal of the article is to identify the key elements for determining the balance and equilibrium of negotiating powers at international business negotiations, as well as the opportunities for their adequate evaluation and configuration, which affects the conduct and performance of international business negotiations.

Keywords: negotiation, negotiation strategy, negotiation power, the balance of negotiating powers, distorted competition, international business

JEL Classification: F51, M16, F60

1. Introduction

Distorted market competition poses new challenges for business negotiations. It affects the balance of negotiating powers among negotiation participants. Such situations often result in negative consequences for both buyers and sellers. As a result, it opens additional opportunities for international business, because of the emergence of other market participants in the relevant markets, which can provide additional alternatives for both buyers and sellers by reducing the negative impact on the distortion of competition and balancing the negotiating powers of the negotiating parties (Kiryluk-Dryjska, 2016; Brett & Thompson, 2016; Przybyła-Kasperek & Wakulicz-Deja, 2016; Schaerer et al., 2016; Ghavami et al., 2016; Rufo et al., 2016; Jager et al., 2017). The development and implementation of an effective international business negotiation strategy, as well as the assessment of the negotiating powers among negotiating parties and the essential components of their deviation from balance is important for the effective use of the potential of business negotiations — the negotiating power. When solving the scientific problem it is necessary to ensure that its solutions help to consider the balance of negotiating power among negotiation participants, allowing them to achieve the balance and to ensure the most efficiency of the development and implementation of their negotiation strategy. A higher number of sellers and suppliers, allows the buyer to enjoy a greater variety of solutions and more alternatives. In such case, the buyer can take advantage of competitive tension. However, the situation in the absence of competitive tension is completely different. One of the reasons resulting in a lack of competitive tension in the market is that the number of suppliers is not sufficient to create a free and open competition, for example, in case of a monopoly. Therefore, we could define market distortion as the absence of free and open competition. Free competition means that market participants are competing with each other, instead of cooperating to create and maintain a cartel. Open competition means that the market entry barriers are sufficiently low, thus making the profits of existing players rather low, because otherwise new entrants coming into the market would try to sell with lower profits, which would essentially be useful for customers and thus ensure their sales. There are two types of buyer power: the power, arising from the nature of the market (monopsony, oligopsony and monopoly markets), and the negotiating power. If the buyer can reduce the price to the level lower than the market competition among suppliers, it means that he has the monopsony power. Negotiating power depends on the bargaining strength, demonstrated by the buyer during communication and negotiations with suppliers. Monopsony power makes getting a lower price easier than using negotiating power. Negotiating power is used only when the supplier has a corresponding market power, which can be levered with negotiating power. The consequences of using negotiating power in each case are very different. In cases of monopsony and oligopsony markets, buyers' powers decrease the volume of sales and productivity in the supply market, which ultimately has a negative effect on the consumer market. The negotiating power of the buyer is more of a compensatory nature. It increases the volume of production in the supply market and can improve the market situation in the consumer market.

Object of the scientific article is the search for balance of negotiating powers at international business negotiations under distorted market competition. **The purpose of the research** is to perform a complex analysis of the current theory and practice in developing and implementing international business negotiations and negotiating strategies under distorted market competition, as well as to reveal improvement opportunities for development

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and implementation of these strategies in cases of monopsony, oligopsony and monopoly. **The scientific problem** is that negotiation theory lacks measures to assess and balance the negotiating powers of negotiation participants under distorted market competition. **The relevance of the study and the level of research**. The relevance of this study has both theoretical and practical aspects. The theoretical relevance is related to the assessment and development of negotiating power among participants at international business negotiations, as well as the scientific search for measures to ensure their effectiveness and the development of a scientifically-based, sustainable and effective negotiation power balancing system. Such a system could improve the efficiency of negotiating teams in distorted market competition. The practical relevance is related to challenges of organising business, increasing purposefulness of recent developments, which unfolds in increasing numbers of alternative business solutions and the need to search for new business partners, leading to greater expedience of business transactions, their efficiency and, ultimately, increasing the competitiveness of businesses entities in international business environment. Thus theoretical and practical relevance of this research can be characterized by the need to find and create a scientific basis for measures used for balancing negotiating powers among participants at business negotiations. They should help make an objective assessment of the negotiating powers and relationships between international business negotiation participants and their competitors, purposefully and effectively forming and using the negotiating powers of the negotiating team. These measures should guarantee a successful development and implementation of an effective business negotiation strategy in the context of international business development and increase its competitiveness, taking into account the circumstances, which distort market competition.

2. Monopsony and the buyer power

Monopsony power is a mirror reflection of the power of a monopoly: it is the buyer's market power, as opposed to the seller's market power (Dassiou & Glycopantis, 2008; Matsudaira, 2014; Danziger, 2010; OECD, 2008; Bonanno & Lopez 2012; Strobl & Walsh, 2007; Barr & Roy, 2008; Rotemberg, 2008; Brennan, 2011; Strobl & Walsh, 2016). Monopsony power can be determined directly and indirectly. In cases of the former, it is determined by comparing the competitive market price with the price obtained by the buyer. The level of the prevailing market prices, determined by competing companies, does not reflect the actual purchase price. Meanwhile, the indirect monopsony power assessment method includes such factors as the market, market segments, entrance barriers and other relevant factors. The buyer power is related to the way how purchasing companies may affect the trade relations with sellers and suppliers. The buyer power can manifest both through monopsony power and through the buyer's negotiating powers. The difference between these two types of buyer power is based on the structure of their sources and the entirety of the measures. A business entity is considered as having monopsony powers, when the share of its purchases in the market is relatively high and when it can influence the price according to the sales volumes. The differences in the use of the negotiating power show on the level of discounts obtained. The negotiating power of the buyer shows his bargaining strength in relation with the supplier. Both types of buyer power opens the way to the level of lower sales prices. In case of monopsony power this can be achieved by emphasizing lower purchase volumes, when the negotiations involve expressing intensions to buy less (Brennan, 2011; Strobl & Walsh, 2016). The main difference with the case of monopsony power is that this

case involves reducing prices below the competitive level, while in case of negotiating power, the seller still operates on a competitive level (OECD, 2008; Bonanno & Lopez, 2012; Strobl & Walsh, 2016). Monopsony and oligopsony powers (assuming that there is no price discrimination) lead to market distortions. As a rule, that is detrimental both to direct sellers and suppliers, as well as further links of the supply chain (Matsudaira, 2014; Danziger, 2010; OECD, 2008). Monopsony power supply in the market transfers the profit from supplier to buyer. Business entities with monopsony power behave as if they had higher marginal costs compared to companies that do not possess monopsony power. This ultimately increases the price for the end user, even if the costs are actually lower. Owning market power in the supply market as well, monopsonists do even more damage than if it they wouldn't. Customers using negotiating power as a compensatory element (for example, where their negotiating power fully or partially compensates the market power of sellers) may increase the volume of production in the market and make the final consumers in the market better off. The extent to which customers can benefit from the negotiating power depends on the nature of contracts with suppliers and the level of competition in the consumer market. Increased consumer competition and their extent result in this negotiating power earning greater discounts for a wholesale price and bringing greater benefit to the consumers (OECD, 2008; Bonanno & Lopez, 2012; Strobl & Walsh, 2007). The research of monopsony power in practice shows that it may be determined by available alternatives for the sellers, which determine the volume of the buyers' monopsony power. If finding alternative buyers is easy, then their monopsony power is limited. Other sellers may be located in different geographical regions, be engaged in different activity and have different market needs, but their products may still be able to satisfy the same needs. Also, when searching for new markets, it is important to identify the presence of monopsony power in smaller geographic areas with a smaller number of products, where a hypothetical monopsonist could influence the price drop in that territory (Antaki & Kent, 2015; Petriwskyj et al., 2015; Przybyla-Kasperek & Wakulicz-Deja, 2016; Schaerer et al., 2016; Ghavami et al., 2016; Rufo et al., 2016; Jager et al., 2017). When the number of buyers and sellers is small, negotiations between buyers and sellers (according to their capabilities) may also take place regarding the possible excess profit. The allocation of excess profit depends on the relative negotiating power. This excess profit is the objective of the buyers and sellers, thus motivating them to come into an agreement without looking for alternatives. The more efficiency buyers show in their negotiations, the more alternatives they have, resulting in fewer alternatives for the sellers and getting a larger share of the excess profit. Buyers' profit from transactions depends on their ability and willingness to look for alternative suppliers. Similarly, sellers' profit gained from transactions depends on their ability and willingness to look for other buyers. The essential factor influencing the negotiating power and showing that buyers have more alternatives than sellers is that buyers can easily switch suppliers without incurring significant additional costs (buyers act as consumer market intermediaries) (Matsudaira, 2014; Danziger, 2010; OECD, 2008; Bonanno & Lopez, 2012; Rotemberg, 2008; Brennan, 2011; Strobl & Walsh, 2016).

2.1 Monopsony power

Monopsony power is influenced by the current suppliers' model. Suppliers' market models can be divided into Ricardian, Quasi or Monopoly models (Matsudaira 2014; Danziger 2010; OECD 2008; Bonanno, Lopez 2012; Strobl, Walsh 2007; Barr, Roy 2008; Rotemberg 2008; Brennan 2011; Strobl, Walsh 2016):

1.   The ***Ricardian model*** refers to suppliers using differentiated supply of raw materials. In this case, the monopsony power depends on the flexibility of supply. More flexibility means greater opportunity to use the monopsony power, which determines production output disruptions in the supply market and is harmful to the end users. In the supply market companies with monopsony powers tend to behave in a way as if they experienced more costs than companies without monopsony powers. Monopsonistic power in supply market harms both productivity of suppliers and consumers. Possessing monopsony powers makes it necessary to recognize, whether your seller has an alternative, which is what determines the monopsony power. Monopsony power is limited if the seller can easily find other buyers in the local market or other geographical areas, or customers who would use these products as substitutes.

2.   ***The Quasi model*** refers to the difference between total revenues and short term expenditures. A monopsonist can use this in the short term. In the long term, any attempt to use suppliers' situation may encourage them not to conclude a deal: the suppliers would not be able to get a return on their investments. If suppliers' market is engaged in fair competition, monopsonists will not be able to use their monopsony power in the long term.

3.   In case of ***Monopoly model***, suppliers and buyers will be more inclined to maximise the total profit for both sides, rather than refuse to cooperate. The creation of compensatory power in case of Monopoly model may lead to smaller prices for the end users. However, if one of the participants withdraws, such a case could lead to a failure of the deal. This would encourage the buyer to look for other markets.

2.2 Cases of monopsony

1.   *Oligopsony among buyers.* Oligopsony among buyers and high level of supply frequently results in Nash equilibrium. In cases of Nash equilibrium in procurement, all buyers define their product value according to the values determined by all buyers. Nash equilibrium will enable to exploit buyers' market power, which will depend on the product threshold value, the number of competing buyers and the flexibility of supply (Dassiou & Glycopantis, 2008; Matsudaira, 2014; Danziger, 2010).

2.   *Cartel monopsonists.* Oligopsonic Nash equilibrium does not maximize customer profits, resulting in a need to coordinate purchases by exploiting the collective market power, increasing profits, reducing purchases and selling prices (OECD, 2008; Bonanno & Lopez, 2012).

3.   *Refusal of the transaction.* Monopsonists can threaten to refuse their transactions thus seeking for more beneficial conditions. For example, proposing to purchase a greater quantity of goods for a price, corresponding to a significantly smaller amount. In such case suppliers merely cover their production costs, only ensuring the utilisation of their capacity (Strobl & Walsh, 2007; Barr & Roy, 2008; Rotemberg, 2008; Brennan, 2011; Strobl & Walsh, 2016).

4.   We examined some aspects of distorted market competition in cases of monopsony and oligopsony. We also defined measures for reducing or eliminating their negative effect by taking advantage of the opportunities of international business negotiations. Further on it would be appropriate to examine the monopoly power of suppliers, ways to identify and assess them, as well as define the means to direct the balance of power towards the benefit of the buyer.

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3. Conclusions

1. In this article, we examined aspects of distorted market competition in case of monopsony, which are significant for developing and implementing negotiating power in international business. One of the reasons for the lack of competitive tension in the market is an insufficient number of suppliers to create a free and open competition, such as in case of a monopoly. Therefore, we can refer to a distorted market as an absence of free and open competition. Free competition means that market participants are competing rather than cooperating with each other and forming cartel relations. Open competition means that the market entry barriers are sufficiently low, thus making the profits of existing players rather low, because otherwise new entrants coming into the market would try to sell with lower profits, which would essentially be useful for customers and thus ensure their sales.

2. The buyer power refers to how buyers or users can influence transaction terms with their suppliers. There are two types of power: monopsony power and bargaining power. If the buyer can reduce the price to the level lower than the market competition among suppliers, it means that he has the monopsony power. Negotiating power depends on the bargaining strength, demonstrated by the buyer during communication and negotiations with suppliers. Lower price is achieved from monopsonic power, rather than negotiating power. Negotiating power is used only when the supplier has a corresponding market power, which can be levered with negotiating power. The consequences of using negotiating power in each case are very different. Monopsony and oligopsony powers decrease the volume of sales and productivity in supply market, which ultimately has a negative effect on the consumer market. The negotiating power of the buyer is more of a compensatory nature. It increases the volume of production in supply market and can improve the market situation in the consumer market.

3. We also analysed measures, which help in situations of distorted market competition, reducing the negative impact on the balance of powers during international business negotiations. Some of the most important elements determining the balance of negotiating power include: market structure, market concentration and competition. Solving situations of distorted competition opens opportunities for international business, as the presence of other market participants can provide additional alternatives for reducing the negative impact of distorted competition on the balance of negotiating powers between negotiating parties. When the number of buyers and sellers is small, the negotiations may revolve regarding the possible excess profit between the buyer and the seller, according to their capacities. Excess profit distribution depends on the relative negotiating power. Being the goal of both buyers and sellers, excess profit encourages them to come to an agreement rather than seek for alternatives. Greater bargaining efficiency of the buyer opens him more possible alternatives, reducing the number of alternatives for the seller, thus allocating the greater share of the excess profit to the buyer. Buyers' transaction profit depends on their ability and willingness to look for alternative suppliers. Similarly, sellers' transaction profit depends on their ability and willingness to look for other buyers. The assessment of the negotiation powers of the negotiating parties is crucial for the development and implementation of an effective international business negotiation strategy in order to make the best use of the negotiation potential – the negotiating power.

4. The search for new suppliers can help expand the available alternatives, thus increasing buyers' negotiating power. Also, having more alternatives means expanding the existing market boundaries. This can be achieved by examining similar or related markets, which may

become potential supplier markets. Sometimes other market participants find it quite difficult to switch to another market.

5. Therefore, buyers looking for potential cheaper suppliers from other markets could think of possible negotiating proposals, which would make it easier to convince potential future partners to cooperate in a new market: sharing experience, such as attaching project managers or sharing some of the technology during joint meetings; subsidising certain costs of entry, buying appropriate measures, or otherwise investing into mutually-beneficial cooperation; offering longer contracts; gradually increasing the volume of orders and their complexity, thus giving the supplier an opportunity to adapt their own technology for more complex work.

6. Buyers often find themselves in an awkward position, when they need their suppliers more than the suppliers need them. One may consider the possibility of closer cooperation with a monopoly enterprise, thus increasing one's dependence. This works in situations, where suppliers have a monopoly in several business areas, but not in all. Such measures can increase the available negotiating power. Of course, it is necessary to avoid situations, where one supplier can provide a full package of services. Therefore, it is important to divide the needed service into segments, creating more freedom of choosing from several suppliers, without giving all the negotiating powers to a single supplier. Or, on the contrary – a strategic move of the negotiations may include offering the supplier to sell more if they made a better offer.

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WATER AS A PHENOMENON OF LIFE IN GLOBALIZED WORLD

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Abstract. Wasting water and food, including drinks, is not only a missed opportunity to secure and address their sufficiency for all people around the world. It also represents a significant loss of other resources as land, energy and human labour. Water is a phenomenon, because it is an important and integral part of the existence of life. Water is indispensable for primary production, in the production of all foods, and it forms the basis of all beverages. Sufficient quantities of drinking water, as well as plenty of food and drinks for all people, is a prerequisite of their lives in economic, social and environmental terms. The US ranks 1st in the world in the waste of food. Total value of snack foods is $ 48.3 billion. This waste costs around a million dollars (Kalousova, 2015). It is important to avoid an enormous waste of everything, where water is an indispensable resource. In our department, we are dealing with the issue of food waste in scientific research. The largest share of food waste, as reported by expert studies, has households (42-53%). Previous research therefore explored the reasons why and what food is wasting in households and how to prevent such waste. Subsequent research focuses on wasting beverages because water is the basis for its production. Pre-research on the principle of the questionnaire survey provides information on beverages and milk purchased in retail operating units including an e-shop, as well as on their wasting in households in the Czech Republic.

Keywords: globalization, wasting, households, water, food and drinks (beverages)

JEL Classification: O 52, Q01, Q02

1. Introduction

A global problem that affects every individual is eating enough (lack of) water, food and beverages. It is closely linked to the waste of the global dimension. In the higher income countries (e.g. in Europe), the biggest contributors to food waste are distribution and consumption (i.e. household level) while in the lower income countries (e.g. in Sub-Saharan Africa) it is the agricultural and postharvest stages which account for much of the food loss generated (Kummu et al., 2012; Parfitt et al., 2010). Lack of water, the waste of drinking water, food, including drinks, have irreversible environmental impacts. Drinking water and its

use as non-household water contributes to its deficiency in the world as a whole. There is also a lack of water in many places in the Czech Republic

Wasted food represents waste that must be disposed of (incinerated use as an energy source, landfill-decay). All this threatens the environment and disrupts the sustainable development of society. Waste reduction at the consumption level is critical as well because the environmental impact accumulates throughout the stages of the food life cycle (Williams & Wikstrom, 2011). In a globalized world economy, however, the economic aspect of production is more and more preferred than the ecological and social plane. It remains second. Therefore, it is important to increase attention in this context to natural capital, which includes raw materials including water (Regnerova & Regnerova, 2017).

Resources are not inexhaustible and therefore we have to look for ways to protect and save water resources - not to waste them. Wasting beverages, the basis of which is drinking water, are wasting drinking water. The biggest waste of food is households (42-53%). Therefore, this article is directed to households and subsequently deals with the waste of beverages including milk in Czech households.

2. Methods

Specialist aim of this paper is focused to the issue of shortage of drinking water for the inhabitants of planet Earth and to reduce wastage of this valuable resource. Professional and scientific work, monographs and studies that thematically correspond to the focus of the article are the basic resources for meeting the target, theoretical discussion and research. They have been searched for in scientific databases, studied, analyzed, and used comparatively to determine the consistency and difference between the phenomena of general and our research.

The studied issue was methodologically based on scientific knowledge based on the description and analysis of the available scientific literature. The data obtained was interconnected and compared with the daily experience of the respondents of the internal questionnaire survey. A pre-research for the solution of the waste of beverages, including milk in households of the Czech Republic, took place during May 2018 on the principle of an electronic questionnaire survey. The survey was targeted to students of the Czech University of Life Sciences in Prague. The questionnaire was published on the Internet and contained 21 direct and indirect questions in the Czech language. Questions about beverages were based on the CZ-CPA Classification (2015). The survey was attended by 554 respondents.

3. Results and Discussion

FAO study Food Wastage Footprint: Impacts on Natural Resources: Summary Report (2013) provides a global account of the environmental footprint of food wastage along the food supply chain, focusing on impacts on climate, water, land and bio-diversity. Globally the consumption of surface and groundwater resources, (the blue water footprint) of food wastage is about 250 km3, which is equivalent, or three times the volume of Lake Geneva. Some European countries also include beverage waste in their food waste programs. For example, Household Food and Drink Waste in the UK, (2009). Waste from drinks is essentially a waste of water because the base of drinks is water. Against this backdrop of rising demand, 868

million people are chronically under-nourished, equating to one in eight people worldwide. At
the same time, it is estimated that over one third of all food produced globally for human
consumption goes to waste (Bond et al., 2013).

Enough of water belongs to the necessary living needs. Although the Czech Republic and
Europe is quite enough water yet, in many places of our planet Earth is becoming or is
already water scarce "goods". Water, its lack and waste become a global problem. It is
illustrated by the phrase of the world-renowned writer Mark Twain, who declared, 'Whiskey
is for drinking, water to fight for it' (Dubova, 2016).

Water has become an increasingly important ingredient in the development process of all
countries. Not only is safe drinking water essential for our well-being, but water is also a
primary requisite for further agricultural, industrial and energy-related developments (Biswas,
2012). A number of waste studies and research are devoted to waste or food waste. Beverages
are only marginally mentioned. Drinking water, however, is a basic raw material for making
beverages. Therefore, research on food wastage, we have established an internal research on
drinks wastage in households, in particular questionnaires, the results of which are presented
in the article.

Figure 1: The structural model of food waste behaviour
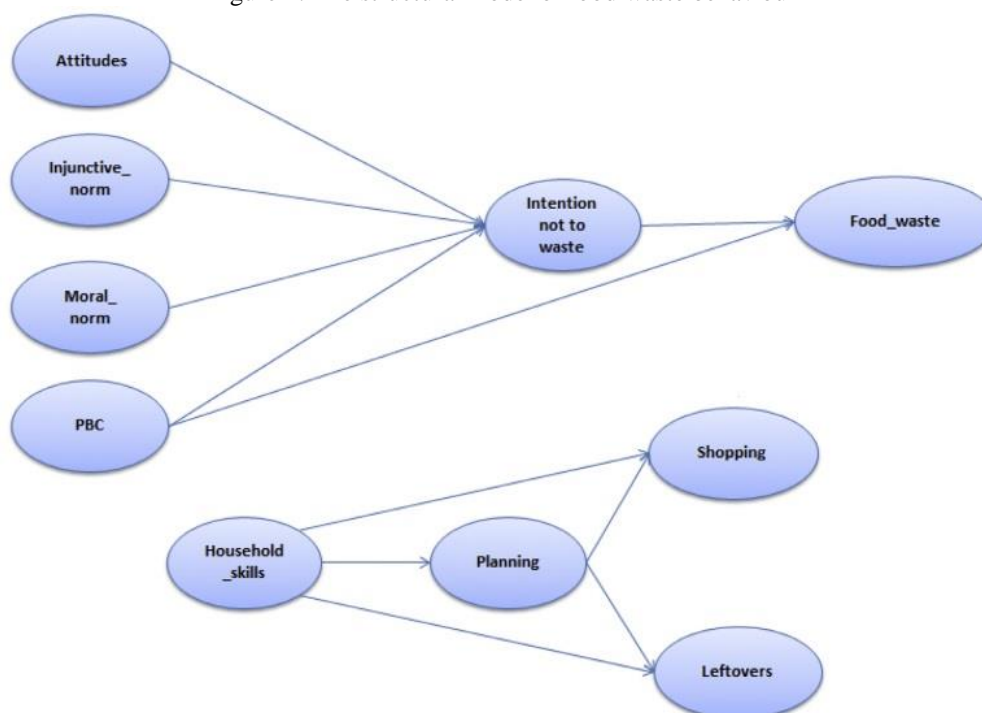
*Source: (Stancu et al., 2016. Determinants of consumer food waste behaviour: Two routes to food waste.
Appetite 2016)*

The model shows relations and influence between attitudes, injunctive norm, moral norm,
perceived behavioural control and household skills. Many studies of food-related behaviour
have drawn on the Theory of Planned Behaviour (Ajzen, 1991) to explain behaviours of
interest (Conner & Armitage, 2002). The Theory of Planned Behaviour posits that
behavioural intention is the primary antecedent of behaviour (Ajzen, 1991). As consumers are
generally waste aversive (Bolton & Alba, 2012), there is reason to believe that intentional
processes may drive their food waste behaviour.

3.1 Own research

A total of 554 respondents were involved in the survey, including 67% of women and 33% of men. This ratio of female and male respondents also corresponds to previous surveys on retail food purchases. In terms of age composition, 78% of consumers were 21-35 years old and 11% at the age of 36-50 years, ie up to 50 years 493 respondents were predominantly economically active. In terms of the number of respondents' households, the most represented were 2 members (36%), then 3 and 4-member households (24% = 48%), a total of 466 respondents. The remaining 16% of households were single-member, five-member and multi-member. Municipalities were 75% and 25% rural. Respondents' households covered all regions of the Czech Republic including Prague.

In terms of the type of retail establishment, the respondents in the role of the consumer buys drinks at the supermarket (81%), followed by hypermarkets and least in e-shops, as shown in Figure 2:

Figure 2: Type of retail unit used for buying drinks
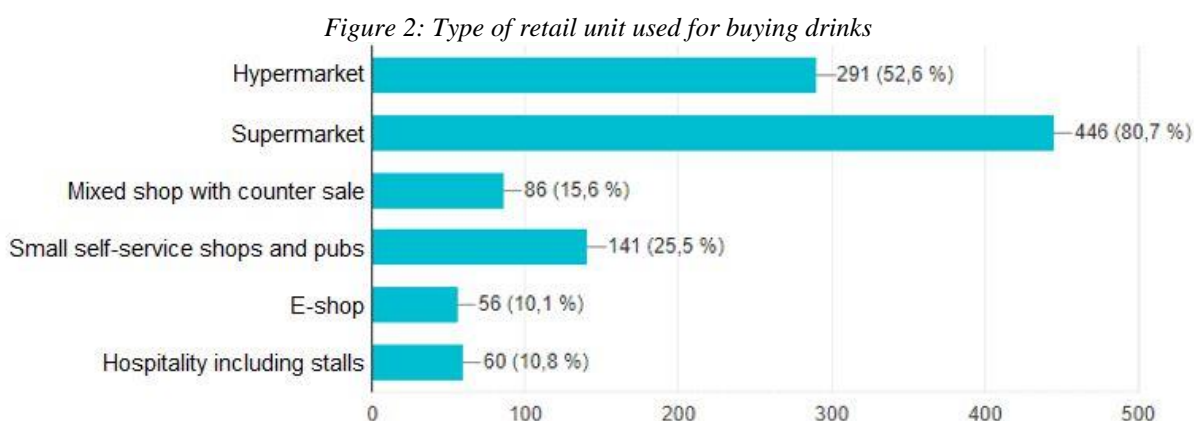
Source: (own processing)

In the monitored households, for non-alcoholic beverages, most mineral water is purchased unsweetened and non-flavoured, followed by other non-alcoholic beverages and milk. Most of the purchased beverages are waste milk (23%), least mineral water (7%). More than half of households (52.5%) do not waste any drinks in this group. In addition to purchased beverages, spilled coffee and tea was monitored per household member per month, which was prepared at home.

As for alcoholic beverages, beer, including non-alcoholic beverages, is mostly bought in monitored households, followed by wine and then spirits. There are no alcoholic beverages in 48 households (8.7%). If alcoholic beverages are purchased in households, then wine, then beer and the least spirits are wasted. In 399 (72%) of the 554 households surveyed, alcoholic beverages are never wasted. An important role here is played by the price of spirits.

In the next part of the questionnaire survey, it was observed which marketing tools affect the respondent as a consumer when buying drinks. Generally most often, there are occasional discounts on buying drinks (74.5%). The following chart lists other promotional items that also affect the purchase of beverages:

Figure 3: Promotional means affecting consumers when purchasing beverages
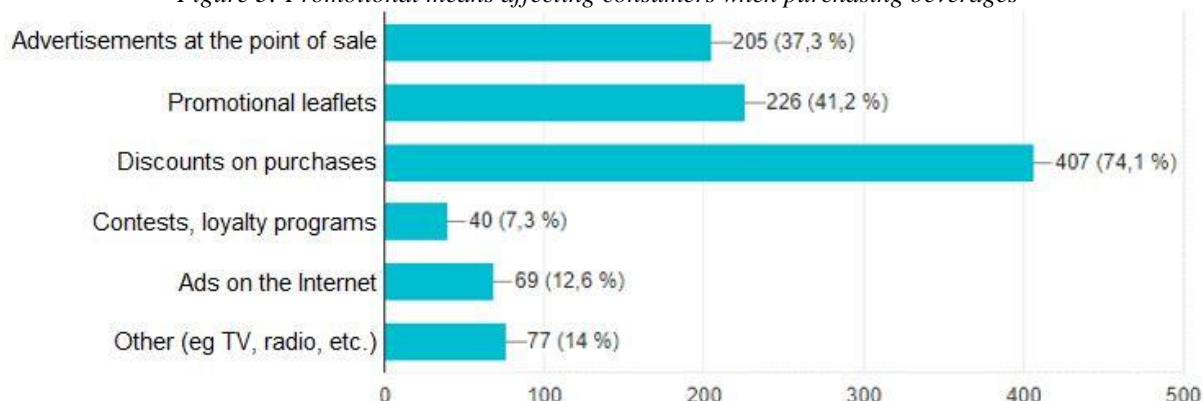
Source: (own processing)

Here, too, it is confirmed that consumers are influenced by 75% discounts at the point of purchase when purchasing beverages. Respondents predominantly expressed the view that the rise in beverage prices would not restrict their waste (318: 233). 374 respondents (67.6%) report that they will spend up to CZK 1000 for drinks in their household per beverage member

The most effective means to reduce the amount of drinks ended in the sink respondents consider family education and other means, which are presented in Figure 3:

Figure 4: Means to reduce the amount of drinks ending in the sink
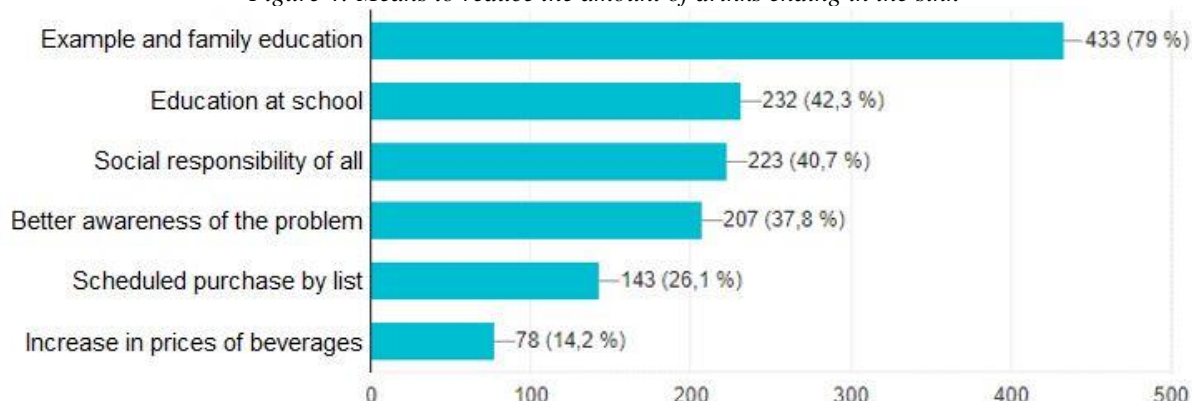
Source: (own processing)

Concerning the attitude towards wasting, the chart clearly shows that education in the family and at school, social responsibility of companies and institutions, planned purchase as well as better education in mass media is the most influential. The last spot is the increase in prices of beverages. This confirms the view of 58% of respondents that the increase in beverage prices does not restrict the waste of beverages

The twentieth question of the questionnaire concerned the drinking of tap water. Of the 554 respondents, 497 responded that they drink tap water. This figure surprisingly shows that drinking tap water is taken as 90% by respondents as a drink. This is also an inspiration for further exploration of water wasting, namely the wasting of drinking tap water in Czech households. The last research question was aimed at estimating the average water consumption in litres per person per day in the Czech Republic. Estimate was quite different:

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74 respondents rated 10 l, 230 respondents were 100 litres, 128 respondents were 120 litres, 102 respondents were 150 litres, and only 19 respondents were 300 litres.

The specific (average) water consumption in the whole country, converted to one person and one day is given by 120 litres. This consumption also includes water consumed in industry. For water consumption, the following amounts are included: US 300 l, advanced Western European countries 150-200 l, third world countries only 10 l. The sanitary minimum declared by the World Health Organization is 100 litres (Water consumption, 2013). Although the respondents' estimate was different, 358 (65%) responded to the value between the official hygiene minimum (100 l) and the specific (average) value in the Czech Republic

4. Conclusion

Drinking water is the basis for making beverages. If we pour out drinks into a sink, it means we not only waste them, but we waste our precious liquid-drinking water, which is deficient on our planet. The results of an internal questionnaire survey on wasting beverages, including milk, in Czech households show that Czech households can find reserves and possibilities to avoid it. The respondents themselves introduced family, school, corporate social responsibility and institution building, planned purchasing, and improved media literacy as important influences that respondents are handling natural resources. A number of studies also show an increase in the price of water. In the questionnaire survey on beverages, this hypothesis was not fully confirmed. But when quantifying financial losses for purchased beverages that are not consumed or not consumed and pouring, they are non-negligible items in the domestic budget. This is also related to the marketing trend of impulsive shopping where retailers are interested in maximum sales (profit), regardless of the fact that a number of food and beverages are not consumed and is wasted with them. There is a need for social responsibility of companies and institutions, including mass media, which often take a loyal attitude towards these issues. A World Resources Institute think-tank study found that out of the 167 countries it compared, in the year 2040 thirty-one would suffer from water scarcity. Not only climate change, but also the waste that is still significant in many parts of the world, will be underlined. In addition, the population is more numerous and richer, the more water it consumes. It is therefore necessary to find a way to force the whole planet to water (Water Waste, 2016). Water becomes deficient "goods" in the coming decades. Critical situation can be avoided by a series of measures. These measures can be simple and complex. Simplicity is that each individual realizes the "price" of water and will save it. Complex solutions will require global solutions at political, economic and social levels.

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ANALYSIS OF THE DEVELOPMENT OF THE EU ECONOMY

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Abstract. We consider today's economy and the world as global. Small economies, such as the Czech Republic and the Slovak Republic, play a completely different role. However, both countries are part of a larger entity, the European Union. The EU already has greater global ambitions. It is able to compete to some extent with the economies of the US, China, Japan. However, the EU as a whole, consisting of 27 states, represents a very heterogeneous economy. We can talk about advanced Germany, France, northern Italy, or the exiting UK. There are also more underdeveloped states in Central and Eastern Europe and others. If we want to predict the EU future gross domestic product, we can do so based on an EU-wide Gross Domestic Product time series. The aim of this paper is to predict the evolution of the gross domestic product of the European Union based on an analysis of the individual sectors of the EU economy. As a tool for time series alignment, artificial neural networks were used. Specifically, the classic multilayer perceptron neural networks were used. In addition, neural networks of basic radial functions were used. This type of neural network uses fuzzy logic. Also interesting is the comparison of the development prediction based on the analysis of the individual sectors of the EU economy and the analysis of the time series of the total gross domestic product.

Keywords: prediction, artificial neural networks, GDP, European Union

JEL Classification: C45, E00, E27

1. Introduction

Globalization is the process of integration and interaction between individuals, societies and governments of different nations. It is also a process that is driven by international trade and investment and is highly supported by information technologies (Johnson, 2007). According to Valaskova et al. (2018), the global economy assumes not only free trade but also the liberalization of the entire complex of economic relations. The term globalized world economy means the development of a society that is essential for improving the competitiveness of the economy, strengthening its integration into the world economy system, etc. Increased use of information and communication technologies is a prerequisite for the transition to a new economic structure (Klochkova et al., 2016). According to Jori (2015), technology was another major driver of globalization. The development of modern technologies has brought more information and knowledge to the world. Crisan and Crisan

(2008) state that knowledge-based organizations are now more than a necessity. Information technologies have provided new and valuable tools for identifying and monitoring economic opportunities to various economic factors, including faster and more detailed analyses of economic trends around the world, and so on. According to Enderle (2009), a company must be competitive and effective in order to be successful. Therefore, it is necessary to increase its performance through various methods. One of the most appropriate and most worldwide methods is the widespread Economic Value Added (EVA). This indicator will enable companies to increase their performance, value and competitiveness on world markets (Vrbka, 2017). Turbulence in the economy presents the economy as an evolutionary process and restores history as essential to understanding economic processes (Kliestik et al., 2018). Thus, the turbulent global environment creates ever-changing economic conditions (Vodopivec, 2012). Currently, the EU is able to compete to some extent with the economies of the US and China. China was the world's largest economy in 2017 for the third year. The European Union was second. China and the EU together make up 33.9 percent of world economic output. The United States remained third. The three largest economies of the world produced about 62 trillion USD together (Dungey & Gajurel, 2014).

The aim of this paper is to predict the development of the EU's Gross Domestic Product (GDP) on the basis of an analysis of the individual sectors of the EU economy. According to Vrbka (2016), GDP measures the financial value of the total production of goods and services in a given country for a certain period of time. GDP generates the economic performance of a country or region and is useful for comparing differences in the standard of living of nations. GDP is one of the most important economic indices, which represents a view of the state economy. Therefore, it is very important to find prognoses and estimates of GDP according to official statistics (Bartoseviciene et al., 2005). Forecasting the future development of GDP growth is a central issue in the economy (Karel & Hebak, 2018). Today, a number of techniques and approaches can be used to predict GDP. For example, Yang et al. (2016) used the ARIMA model to predict GDP. The GDP forecast is set for the next five years and compares the forecast with real values. The result shows that this model is effective for the GDP forecast in the short term. Stevanovic et al. (2018) estimated GDP based on artificial neural networks (ANN). ANNs have been trained by two training algorithms, using extreme learning and the redistribution algorithm, to produce the best predictions of GDP results. According to the results, it can be stated that the ANNs with an extreme learning approach could generate acceptable GDP forecasts. GDP can be used to monitor all the economies of the world. Through GDP, it is also possible to compare different economies. GDP is constantly changing, based on new data on productivity, consumption and investment. Therefore, economists and decision-makers can use GDP to measure the growth or decline of the economy (Vltavska et al., 2015). However, the disadvantages include, in particular, that GDP does not take into account natural disasters and the quality of goods.

2. Data and methods

The data was taken from Eurostat (2017)[10]. In addition, the GDP data for each quarter obtained through the production method will be used in the text. GDP will be at current

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[10] Methodology for determining GDP by individual methods is specifically mentioned on the website of the Czech Statistical Office (www.czso.cz).

prices, i.e. not adjusted for inflation. The time interval is defined by a series from the 1st quarter of 1995 to the 1st quarter of 2018, including. This is 93 records of data. The calculation will not use product taxes and product subsidies. We will align production time series of individual institutional sectors. Manufacturing, mining and quarrying will be concentrated under one item. Basic statistics of data by institutional sector are given in Table 1.

Table 1: Data input statistics for the data file

Institutional Sector of the National Economy	Minimum	Maximum	Spread	Sum	Average
Total	1807293	3912389	3,53E+11	270926747	2913191
Agriculture, forestry & fishing	28013	60642	84909020	4199365	45154
Manufacturing, mining and quarrying and other industry	356940	772697	1,38E+10	53508033	575355
Construction	104823	226919	1,19E+09	15713751	168965
Distributive trades, transport, accommodation and food services	345193	747266	1,29E+10	51747009	556419
Information and communication	90365	195619	8,84E+08	13546337	145660
Financial and insurance activities	94883	205400	9,74E+08	14223654	152943
Real estate activities	198802	430363	4,28E+09	29801942	320451
Professional, scientific, technical, administrative and support services	189766	410801	3,9E+09	28447308	305885
Public administration, defence, education, human health and social work activities	336157	727704	1,22E+10	50392375	541853
Arts, entertainment and recreation; other services	62352	134977	4,21E+08	9346973	100505

Note: All amounts in the table (and further in the text) are in millions of EURO.
Source: (Authors)

For information on the representation of individual institutional sectors on GDP creation, see Table 2.

Table 2: The share of institutional sectors in GDP creation

Institutional Sector of the National Economy	EU-28 (Percentage share of total GDP)	
	2006	2016
Agriculture, forestry & fishing	1,6	1,5
Industry	20,2	19,3
Construction	6,3	5,3
Distributive trades, transport, accommodation and food services	19	19,1
Information and communication	5	5
Financial and insurance activities	5,4	5,1
Real estate activities	10,8	11,2
Professional, scientific, technical, administrative and support services	10	11
Public administration, defence, education, human health and social work activities	18,2	19
Arts, entertainment and recreation; other services	3,4	3,5

Source: (EUROSTAT, 2017)

The table compares the representation of individual institutional sectors of the national economy in 2006 and 2016. It is clear from the table that the share of institutional sectors in GDP creation does not change much over time. Manufacturing, mining and quarrying have the largest share. During the observed period, it is around 20%. The second place is occupied by business, transportation, accommodation and hospitality with an average of 19%. It is

worth noting the third most important sector - public administration and defense, education, health and social care. It averaged almost the same value as industry and trade. Specifically, the public administration and defense, education, health and social care sector contributes 19% to the total GDP in 2016. The development of agriculture, forestry and fisheries is also interesting. It is undoubtedly the strategic sector of the national economy of all EU countries. In 2006, it reached 1.6%, which then declined to 1.5% in 2016. Compared to the sector's share of the GDP of the Czech Republic, the decrease is minimal. For comparison, the share of the agricultural sector in the Czech Republic decreased by more than 1% in the monitored period.

For DATA processing, DELL's Statistica version 12 will be used. The data mining tool of the neural network will be used. In particular, we will use time series (regressions).

We will generate Multilayer Perceptron Networks (MLP) and Neural Networks of Basic Radial Functions (RBF). Time will be the independent variable. We determine the GDP of the institutional sector as the dependent variable. We divide the time series into three sets - training, testing, and validation. The first group will contain 70% of input data. Based on the training set of data, we generate neural structures. In the remaining two sets of data, we always leave 15% of the input data. Both groups will serve us to verify the reliability of the found neural structure, or the found model. The delay of the time series will be 1. We will generate 10000 neural networks. We will preserve 5 of them with the best characteristics[11]. In the hidden layer, we will have at least two neurons, at most 20. In the case of the radial basic function, at least 13 neurons, at most 18, will be hidden in the hidden layer. For the multiple perceptron network, we will consider these activation functions in the hidden layer and in the output layer: Linear, Logistic, Atanh, Exponential, Sinus.

Other settings are left by default (ANS – automated neural network). The results, if the outputs are not adequate, can then be corrected by adjusting the weights of individual neurons in the structure using the VNS tool (own neural networks).

As soon as we generate neural networks, we will evaluate their validity expertly, not only according to statistical characteristics. Ideally, the predictive confrontation will suffice.

3. Results

Due to the limited length of the contribution, we only show results for one area of the national economy, namely manufacturing, mining and quarrying. Analogously, an analysis of all the above mentioned areas was made.

3.1 Manufacturing, mining and quarrying

We can state that, above all, mining and quarrying play a strategic role in the national economy of the Czech Republic. Not only because of their share of GDP, but also because of the acquisition of basic raw materials for the manufacturing industry. It is the largest share of this sector's production. Preserved neural networks are listed in Table 3.

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[11] We orientate ourselves using the smallest square method. We will terminate network generation if there is no improvement, i.e. to reduce the sum of squares. Thus, we will preserve those neural structures whose sum of squares of residues to actual gold development will be as low as possible (ideally zero).

Table 3: Overview of preserved neural networks – manufacturing, mining and mining

	Network name	Training perf.	Testing perf.	Validation perf.	Training error	Testing error	Validation error	Training algorithm	Error function	Activation of hidd. lyr.	Output activ. funct.
1	RBF 1-17-1	0.993368	0.993655	0.999109	74909931	116561647	12198557	RBFT	Sum of sq.	Gauss	Identity
2	RBF 1-15-1	0.994118	0.993653	0.999645	65780212	119430206	10945397	RBFT	Sum of sq.	Gauss	Identity
3	MLP 1-18-1	0.998777	0.999915	0.999093	8922816	2659408	10085197	BFGS (Quasi-Newton) 320	Sum of sq.	Tanh	Identity
4	MLP 1-14-1	0.998569	0.999804	0.999243	11470527	3877504	8909641	BFGS (Quasi-Newton) 316	Sum of sq.	Tanh	Identity
5	RBF 1-18-1	0.995159	0.996287	0.999095	53102349	73603038	16493212	RBFT	Sum of sq.	Gauss	Identity

Source: (Authors)

As in the case of agriculture, both RBF and MLP networks are represented. All three preserved RBFs were obtained using the RBFT algorithm. The two preserved MLPs were generated using the Quasi-Newton algorithm. As the error function, the sum of the smallest squares was also used in this case. For the activation of neurons in the hidden layer, Gaussian curve was used in all cases of preserved RBF networks, in the case of MLP it was hyperbolic tangent. To activate the neurons in the output layer of all networks, the identity function was used. All networks show exceptionally high performance across all datasets. The lowest value of the correlation coefficient is more than 0.993 (training set of data RBF 1-17-1). The statistics of the aligned time series are listed in table 4.

Table 4: Aligned time series statistics – manufacturing, mining and quarrying

Statistics	1.RBF 1-17-1	2.RBF 1-15-1	3.MLP 1-18-1	4.MLP 1-14-1	5.RBF 1-18-1
Min. prediction (Training)	365185,4	357399,1	358871,2	358461,6	358979,2
Max. prediction (Training)	736988,6	739568	765157,9	764149	738362,4
Min. prediction (Testing)	369390,5	370842,4	376131,8	376919,9	375373,6
Max. prediction (Testing)	729236,1	732627,8	760191,3	761686	737472,7
Min. prediction (Validation)	365403,3	361598,2	364771	365650,2	364247,2
Max. prediction (Validation)	672752,9	673651,9	661996,9	663830,3	673602,7
Min. residues (Training)	-29310,4	-32806,1	-12422,3	-13205,8	-25100,8
Max. residues (Training)	50774,4	39032,9	11586	13362,7	37898,4
Min. residues (Testing)	-27803	-30157,2	-4527,4	-5340,1	-23220,4
Max. residues (Testing)	30066,7	26675	2605,4	3356,5	21830,1
Min. residues (Validation)	-11151,1	-12583,5	-10941,3	-10413,6	-3363,1
Max. residues (Validation)	9480,8	4442,9	8242,8	6409,3	14497,7
Min. standard residues (Training)	-3,4	-4	-4,2	-3,9	-3,4
Max. standard residues (Training)	5,9	4,8	3,9	3,9	5,2
Min. standard residues (Testing)	-2,6	-2,8	-2,8	-2,7	-2,7
Max. standard residues (Testing)	2,8	2,4	1,6	1,7	2,5
Min. standard residues (Validation)	-3,2	-3,8	-3,4	-3,5	-0,8
Max. standard residues	2,7	1,3	2,6	2,1	3,6

Source: (Authors)

It can be seen from the table that even in this case the statistics do not differ significantly. In order to select the highest-quality neuron structure, we compare the course of actual production and aligned time series (Figure 1).

Figure 1: Time series prediction - industry, mining and quarrying
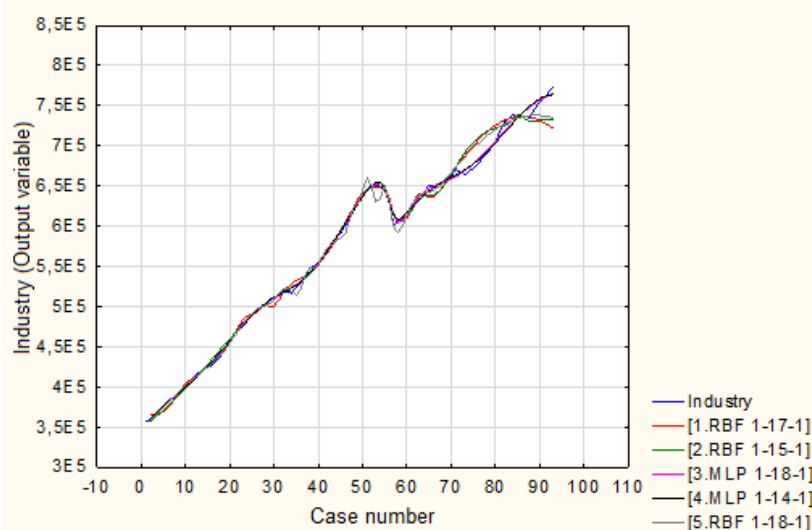
Source: (Authors)

If we take into account the previous results and the graph in Figure 1, we rank the network number 3 (MLP 1-18-1) and 4 (MLP 1-14-1) as the most successful neural structures.

4. Conclusion

The aim of this paper was to predict the development of the gross domestic product of the European Union on the basis of an analysis of the individual sectors of the EU economy. The aim was fulfilled. For each institutional sector of the national economy, neural structures were created to align time series. If neural structures show high performance, low error and low residue, they can be used to predict the future development of production of the institutional sector of the national economy. In addition, together with product taxes and the negative value of the subsidy on products, we will affect the development of the entire GDP of the European Union. In our case, all generated networks showed very high performance. The correlation coefficient always moved above the 0.993 level. This in itself represents an extraordinary result. Nevertheless, according to real GDP growth, in most institutional sectors of the national economy, one neural network could be chosen to outperform other neural structures. For comparison, we present a graph of actual GDP growth of the European Union (Figure 2).

Figure 2: Evolution of EU GDP from the first quarter of 1995 to the first quarter of 2018
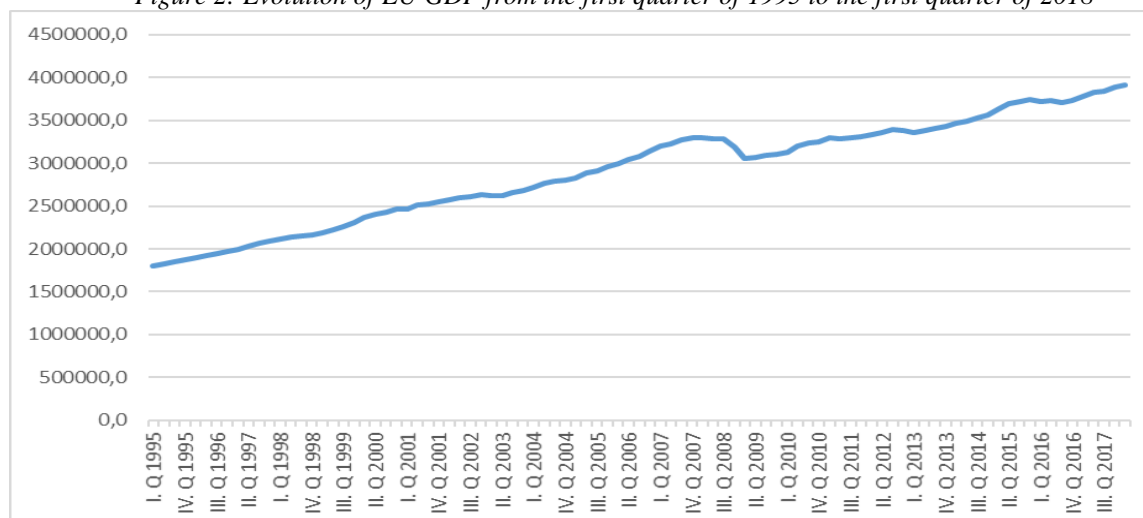
Already the shape of the EU GDP development curve precurses the ability of neural networks to accurately predict the future development of this macroeconomic variable. It does not significantly differ from developments for individual institutional sectors of the national economy. It can be assumed that in this case artificial neural structures would be successful in predicting future developments as well as in the case of institutional sectors of the national economy. However, to conclude the paper, we state that:

1. The artificial neural structures align the time series of the individual institutional sectors of the EU GDP economy so that we can assume that the sum of the future predictions of the development of the individual institutional sectors of the EU economy will be able to predict the future EU GDP.

2. The shape of the EU GDP prediction curve, the minimum change in EU GDP over time and the results of the time series alignment of the institutional sectors of EU GDP suggests that artificial neural networks are an appropriate tool for predicting EU GDP as one aggregate variable. This is, however, necessary to verify with calculations.

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ANALYSIS OF THE AGRICULTURAL PRICE DIFFERENTIAL BY COUNTRIES WORLDWIDE, UNDER CRITERIA OF FOOD SECURITY OF SUPPLY

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Abstract. Food security of supply is a much-debated issue in the branch of economic science of the study of development and globalization, to address the problem of hunger in the world. Both concepts, food prices and supply food security, are closely related, since a decrease in them would be a clear help in the fight against malnutrition in particular and poverty in general. In the present document, this concept will be analysed from the perspective of the price of food, focusing on the differential of food prices between producers and consumers. This communication aims to study these variables in 73 countries around the world, to identify common behaviour profiles, by means of the application of several statistical methodologies. It can be concluded that the margins have increased in the developed countries (Western Europe, the United States, Japan and Canada mainly) in the period under study, with some stability in the food security indicators. On the other hand, margins decrease in developing countries, with notable improvements in these indicators. An almost generalized improvement is observed in the different indicators of food security analysed in the countries that make up the sample, reducing the gap between developed and developing countries. The results obtained in this paper intend to serve as a guide for economic and social policies, which aim to improve human development.

Keywords: Globalization, regional economy, food, price margins

JEL Classification: O13, R50, Q19

1. Introduction

The objective of this work is the study of the evolution of the differential of food prices between consumers and producers worldwide, from the perspective of food security supply as an indicator of the level of poverty, to detect common behavior profiles in countries that make up the sample. Both concepts, food prices and food security of supply, are closely

related, since a decrease in them would be a clear help in the fight against malnutrition in particular and poverty in general.

As the main variable of this work, the price of food has been studied in the economic literature. From a general perspective, the works of Gracia and Albisu (1996), Atance & Garcia (2008), Alston et al. (2009), Martinez & Garcia (2010), Cascante (2012), Swinnen and Squicciarini (2012), Dorward (2013), and Handbury & Weinstein (2015) can be remarked. The problem of high prices is addressed by authors such as Headey & Fan (2008), Gilbert (2010), Arslan (2011) and Bellemare (2015). Thus, Amarillo (2004) reflects on them in the context of economic inequality. Casadevall (2011) studies this question in an international perspective.

The topic of the margins in food will be analysed in this paper to see if there is a different casuistry in developed countries and in those that are developing from the perspective of food security. In this line, interesting previous works on this subject can be highlighted such as Chávez and Villarreal (2009), Cascante (2011) and Sumpsi (2013). However, these studies do not analyse the price margins themselves or use food security criteria in the dimensions considered by FAO (2018).

In contrast between the food shortages suffered in the developing countries and their superabundance in the developed countries, "satiety society", food security constitutes an interesting point of debate in the forums and international organizations. It is clear that the right to food is perceived as a fundamental right of people, coming to appear in multiple regulations. Authors such as Briz (2011) insist that they should be given in sufficient quantity and be in good condition.

Under this approach, an attempt will be made to analyse how food prices have evolved for producers and consumers, in what would be the extremes of the value chain, with respect to the advance or deterioration of countries' food security conditions of the sample studied. With this objective, after this introduction, the methodology has been developed in the following section. The results are presented in a third section in which the cluster analysis is studied, according to the Howard-Harris algorithm, breaking down the sample into three clusters. Finally, the paper ends with the main conclusions obtained, with the discussion of results, and the bibliographical references.

2. Methods

The main variables used in this study are the Consumer and Producer Annual Price Indexes, collected by FAO for 2000 - 2010. Their evolution has been calculated by dividing consumer prices among those of the producers. In this way, a value greater than unity or positive, according to the reference, would mean that the differential between both agents has increased.

The rest of the variables would be the different food security indicators of FAO (2018), collected as the variation in the period 2000-2010. With a few exceptions, a result above unity would reflect an improvement in development. The indicators are classified in the dimensions of food security established by FAO (2018). Only those that offer a sufficient sample for the study have been considered:

- Availability indicators: Sufficiency of average food energy supply, average value of food production, percentage of food energy supply from cereals, roots and tubers, and average supply of proteins, both in general and of animal origin.
- Access indicators: Only Gross Domestic Product per capita in purchasing power parity has been considered.
- Indicators of stability: This group includes the percentage of dependence on imports of cereals, that of crop land equipped with irrigation systems and that of food imports in relation to total merchandise exports, as well as the variability in the supply of food per capita.
- Indicators of use: This category has considered the percentages of population with access to improved water sources and sanitation facilities, as well as the frequency of anemia among pregnant women and children under 5 years of age.

Regarding these variables, all the data worldwide have been studied initially. To reach the largest possible sample, countries and indicators with incomplete information have been discarded. Thus, the sample has been reduced to 73 countries around the world. Several analyses related to cluster methodologies have been performed, following Santesmases (2005).

3. Results: Cluster analysis about the evolution of the differential of agricultural prices

In this section, a clusters analysis has been carried out on the variables under study, referring to the countries of the world that make up the sample, following the Howard-Harris algorithm, with 3 clusters. In the first place, some indicators that complement and justify the analysis will be explained. The estimated sum of squares explained would amount to 61.50%, thus exceeding 50%, with a sum of squares of the total sample of 11.69 and intragroups of 4.50. In addition, the increase in variance explained with respect to the immediately superior number of cluster is less than or equal to 5%, as included in the initial configuration of the analysis. The Lambda of Wilks indicator is 0.156. It implies that the differences between the groups obtained are remarkable being close to 0. The Snedecor F statistic is 0.0000, so these groups would be differentiated by the variables to a 1% level.

Then the cluster analysis performed is presented. The chosen variables are the evolution of the food price differential between producers and consumers, as well as all the variables related to food supply. The results are shown in Table 1. All the indicators in the table belong to the availability and access group, there being none of stability or use. In this table it can be seen that all the Snedecor F statistics reject the hypothesis of equality of the means at a level of 1%, which implies that the differences between the means are significant. In this way each of the factors would have a different behaviour with respect to each of the conglomerates. In short, the clusters obtained would be the following:

o   Conglomerate number 1, with 14 countries in the sample: This cluster is configured as the most positive of the three obtained. All of the food security variables have experienced important increases, ranging from 9.47% of the growth of the average energy supply to that of the Gross Domestic Product per capita, which grew by 70.25%. The differential of agrifood prices would have been reduced by 5.90% in this cluster. This implies an important improvement in its development according to criteria of food security of supply. In this

cluster there are lot of countries that are often described as "developing", with many recent democracies worldwide, mainly Eastern European countries (Albania, Armenia, Latvia, Lithuania, Moldova, Romania, Russia and Ukraine), Asia (Bangladesh, Indonesia and Laos) and Africa (Cape Verde, Ethiopia and Nigeria).

Table 1: Cluster analysis of the studied variables.

		Mean	C. 1.	C. 2.	C. 3.	
	Nº elem.	73	14	29	30	
Variables	Sum of squares	11,69%	1,58%	2,16%	0,76%	ANOVA
Percentage of food energy supply.	Mean:	+4,15%	+9,47%	+6,14%	-0,27%	F(2, 70) = 20,7369
	Est. Dev.:	0,06	0,05	0,06	0,04	p = 0,0000
Average value of food production.	Mean:	+12,23%	+36,76%	+18,69%	-0,46%	F(2, 70) = 46,7427
	Est. Dev.:	0,21	0,20	0,15	0,09	p = 0,0000
Average supply of proteins.	Mean:	+6,79%	+14,85%	+10,23%	-0,29%	F(2, 70) = 30,7214
	Est. Dev.:	0,09	0,07	0,08	0,05	p = 0,0000
Average supply of animal proteins.	Mean:	15,27%	+40,08%	+19,91%	-0,80%	F(2, 70) = 47,9655
	Est. Dev.:	0,20	0,19	0,14	0,07	p = 0,0000
Gross Domestic Product per capita in purchasing power parity.	Mean:	+31,44%	+70,25%	+32,45%	+12,36%	F(2, 70) = 83,7866
	Est. Dev.:	0,25	0,17	0,15	0,10	p = 0,0000

Source: (Prepared by authors on the basis of data supplied by FAO, 2018)

o   Conglomerate number 2, with 29 countries: According to the indicators of this cluster there have been very positive improvements in food security, with growth ranging from 6.14% of the average energy supply to 32.45% of the Gross Domestic Product per capita. However, it should also be noted that all these values would be lower than those of cluster 1. In this case, the price differential would have decreased by 17.25%, the greatest reduction of all the clusters, and would correspond to notable improvements in food security. Developing countries have an important weight once again, especially in the cases of America (Brazil, Ecuador, El Salvador, Honduras, Nicaragua, Panama and the Dominican Republic), Africa (Algeria, Botswana, Cameroon, Egypt, Ghana, Mauritius, Malawi, South Africa, Tunisia and Yemen) and Asia (Philippines, Iran, Jordan, Nepal, Pakistan, Republic of Korea and Thailand). The European presence is limited to Eastern countries (Bulgaria, Croatia, Slovakia, Estonia and Turkey).

o   Conglomerate number 3, with 30 countries in the sample: These countries have a very stable evolution of the first four indexes, having values very close to 0. They only show a notable growth of 12.36% in the evolution of GDP per capita. However, in any case, the values are the lowest of the three clusters obtained. The differential of food prices would have grown 4.66% on average, being the only cluster in which there has been this evolution. Most of the countries included in this group are "developed countries", especially the presence of all the countries of Western Europe, Canada, the United States of America, Japan and Australia.

The Bartlett test obtains p = 0.0000, which would reject the null hypothesis of no significant correlation. The data would be adequate to carry out the factorial analysis of

principal components and obtain the confusion matrix to validate the clusters. This matrix, shown in table 2, is obtained through a discriminant analysis, in which the categorical variable, that would identify the conglomerate to which each country belongs, is taken as a dependent variable, while the independent variables are those that have been used in the cluster analysis.

Table 2: Confusion matrix obtained from the generated clusters

Real groups	Cluster 1	Cluster 2	Cluster 3	Total
1	14	0	0	14
2	0	29	0	29
3	0	0	30	30
Total	14	29	30	73

Source: (Prepared by authors)

In this table, the percentage of correct assignments produced by the discriminant functions is 100%, which is perfect. The values of the discriminant functions generated according to the centroids are shown in table 3.

Table 3: Values of the functions in the different centroids of the groups.

	Function 1	Function 2
Cluster 1	3,6707	-0.3779
Cluster 2	0,4306	0,4134
Cluster 3	-2,1293	-0,2232

Source: (Prepared by authors)

4. Conclusions

After presenting the results of the cluster analysis, we can finally confirm the relationship between the evolution of the food price differential and food security indicators for the period 2000-2010. The food security indicators remain stable in the so-called developed countries (Western Europe, the United States, Japan and Canada mainly), with values very close to 0, in most cases, while their food price differential rises well above of the world average.

The developing countries present a quite different casuistry: The food margins are reduced, all this in the face of relevant progress in their conditions of food security of supply. Despite this, the existence of two fairly clear positions must be pointed out, in which the price differential decreases and food security indicators improve:

- The first group highlights the improvement of food security, with a significant presence of Eastern European countries.
- In the second group, the price reduction between consumers and producers should be highlighted to a greater extent (17.25% while in the previous case it was 5.90%). The countries of Africa, Asia and South America would stand out.

In general, there is an almost generalized improvement in the different indicators of food security, reducing the gap between developed and developing countries. This position is endorsed in previous works such as Johnston and Mellor (1962), Gollin et al. (2002) and Jorda et al. (2014). However, the improvement of these countries is quite insufficient.

It can be concluded by stating that the reduction of the agrifood prices differential would be a primordial factor of collaboration against hunger and poverty. In a final point, it should

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also be noted that the indicators related to "Availability" are those that have been most closely linked to the evolution of the price differential. On the other hand, no "Stability" variables appear as relevant within the results. These can serve as a guide for economic and social policies that aim to improve human development. International cooperation is now even more important in these issues to improve the situation of the weakest and reduce existing asymmetries. The different actions must be done conscientiously since a bad action can even make the situation worse.

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HIGHER EDUCATION AS A DETERMINANT OF POVERTY EXIT IN THE ERA OF GLOBALIZATION: A META-ANALYSIS

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Abstract. Poverty dynamics is widely discussed in the literature. Some authors focus on determinants of poverty dynamics and they identify factors related to poverty exit and poverty entry. One of the considered determinants is education divided into several categories. The aim of the paper was to assess whether higher education of a household head is a significant determinant in increasing the probability of poverty exit. A meta-analysis was used which was conducted based on data from selected studies from all over the world. The studies had to meet some criteria related to availability and comparability of the data. Cumulative meta-analysis allowed showing a change in the importance of higher education to the probability of poverty exit. This approach allowed assessing if higher education is fixed determinant in the era of globalization. Additionally, a meta-analysis conducted in subgroups of countries (subgroups according to development status) allowed comparing the importance of higher education in countries at different levels of economic development. Based on preliminary analysis of the previous research results it was possible to formulate a hypothesis that the odds of poverty exit are definitely higher in households with the high-educated head than in households with the low-educated head. A meta-analysis allows answering the question if this relationship is a global tendency or higher education is more important in some groups of countries than in other groups.

Keywords: poverty exit, poverty dynamics, meta-analysis, globalization

JEL Classification: C25, I32, P46

1. Introduction

Poverty is a phenomenon analyzed all over the world. The causes, the effects, the determinants of this negative phenomenon are studied and the actions based on conclusions from these studies allow to combat and to prevent the poverty. Some authors focus on poverty dynamics. They try to describe the changes in poverty over time and determinants of poverty exits and poverty entries. It should be noted that the time dimension of poverty is a very important part of studies of this phenomenon. Long-term poverty is very dangerous – members of poor households get used to their situation and they even not try to improve their material situation. However, some characteristics of the household and its head may allow to exit from poverty. One of the first authors analyzing poverty over time and analyzing determinants of poverty exit and poverty entry were Lillard & Willis (1978), Coe et al. (1982), Bane & Ellwood (1986). The other authors continued and developed studies focused

on poverty dynamics, e.g. Stevens (1999), Callens & Croux (2009), Andriopoulou & Tsakloglou (2011, 2016). Different authors use different approaches[12] in their studies and additionally within one approach different ways are used to solve one problem, e.g. different authors choose different types of discrete-time hazard models (logit, probit, complementary log-log) or they estimate the same types of discrete-time hazard models but with a different set of determinants.

In this paper, the attention was paid to one of the determinants of poverty exit – on the education of household head. The aim of the paper was to assess whether higher education is a significant determinant in increasing the probability of poverty exit. There was used a meta-analysis which was conducted on the basis of data from selected studies from all over the world. Cumulative meta-analysis allowed to show a change in the importance of higher education to the probability of poverty exit. This approach allows to assess if higher education is fixed determinant in the era of globalization. Additionally, a meta-analysis conducted in subgroups of countries (subgroups according to development status) allowed to compare the importance of higher education in countries at different levels of economic development. Based on preliminary analysis of the previous research results it was possible to formulate a hypothesis that the odds of poverty exit are definitely higher in households with the high-educated head than in households with the low-educated head. A meta-analysis allowed to answer the question if this relationship is a global tendency or higher education is more important in some groups of countries than in other groups.

2. Data and methods

Before performing the meta-analysis it was necessary to identify the list of literature. There was searched Google Scholar database. The search string used was ("poverty exit" and "higher education"). At this stage, 179 documents were identified. The duplicates were removed and some documents were excluded due to lack of access to full texts. From this subset there were selected texts meeting criteria:
- coefficients of the explanatory variables referring to the education of household head were presented,
- standard errors, confidence intervals, t-ratios or the exact values of p-values were provided.

A lot of documents were excluded because they did not meet the second criterion, only a few texts did not meet the first criterion. Finally, in the meta-analysis eight publications with ten estimations were included. The way of identification of studies to the meta-analysis is presented in Figure 1. List of documents including in the analysis is shown in Table 1.

In the meta-analysis, the odds ratios (OR) as effect sizes were used. In all studies, adjusted data were presented. Some models were estimated with unobserved heterogeneity and some of them without unobserved heterogeneity. Some panels are very short (only two waves), some panels are very long (ten and more waves). In the meta-analysis the random effect model was used, because the data were collected from studies not functionally equivalent (Borenstein et al., 2010; Rothstein & Borenstein, 2014). The visualization of the results of the

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[12] Short description often used approaches in poverty dynamics in publication of Layte and Fouarge (2004).

meta-analysis was presented using the forest plot (Lewis & Clarke, 2001). To test the heterogeneity Q test was used and to assess if heterogeneity is low, moderate or high index I^2 (Higgins et al., 2003) was used.

Figure 1: Flowchart of study inclusion
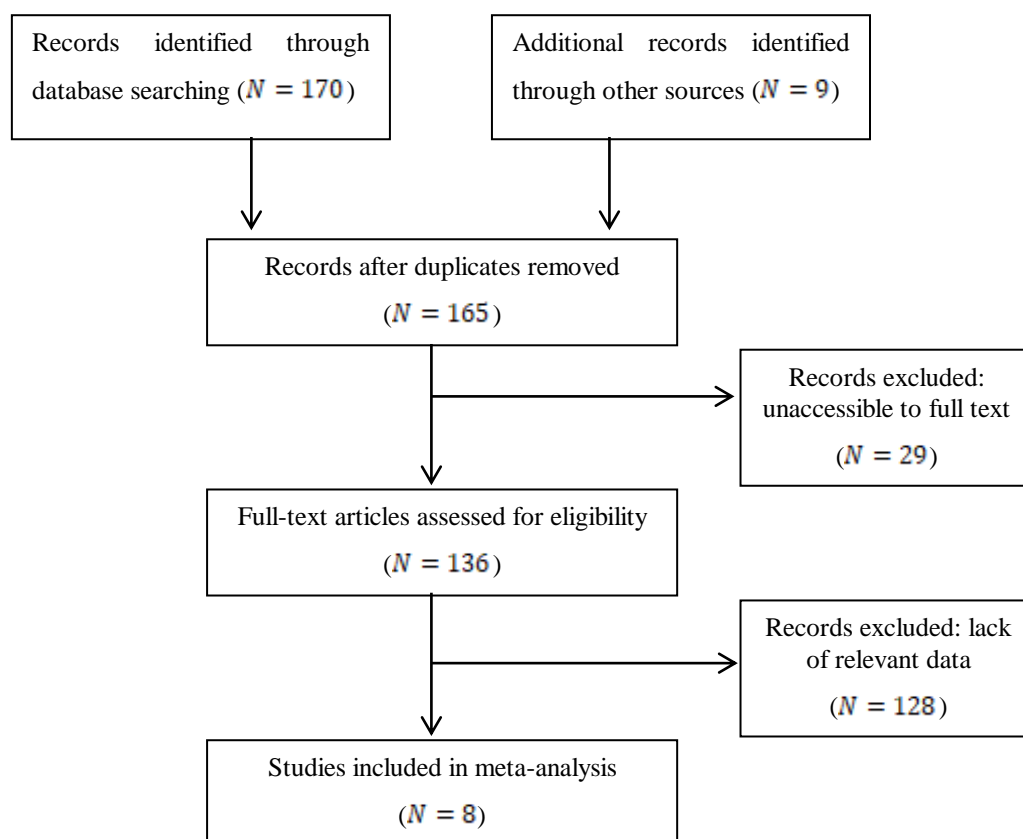
Source: (own work)

Table 1: List of documents included in the meta-analysis

Study	Country/region	Sample	Studied years
Stevens (1999)	United States	10819	1973-1988
Devicienti (2001)	Great Britain	7431	1991-1998
Herrera & Roubaud (2001)	Peru, Madagascar	1720, 1249	1997-1999
Biewen (2003)	Germany	No data	1984-2000
Gebreselassie (2005)	Ethiopia	549	1994-1997
Mosley et al. (2007)	Uganda, Zimbabwe	No data	2001-2005
Barcena-Martin & Moro-Egido (2011)	Europe	32855	2007-2008
Obucina (2014)	Sweden	42704	1999-2007

Source: (own work)

To test the publication bias the funnel plot (Sterne & Harbord, 2004) was charted and the tests proposed by Begg and Mazumder (1994) and by Egger et al. (1997) were used to test the funnel plot asymmetry. Cumulative meta-analysis was used to detect the temporal trend in effect size (Leimu & Koricheva, 2004) and subgroup analysis was used to compare effect sizes in subgroups of countries (Borenstein & Higgins, 2013).

3. Results

Based on documents included in the meta-analysis the pooled odds ratio (odds ratio combined of included studies) was 1.56 (95% confidence intervals: 1.31-1.85), which means that households with high-educated head have higher odds of poverty exit relative to households with the low-educated head (Figure 2). Only one study showed that the odds are lower, but this relationship was statistically insignificant (research results obtained by Herrera & Roubaud (2003) regarding Madagascar). Generally, four out of ten estimations showed that relationship between higher education and the odds of poverty exit was statistically insignificant, six significant estimations indicated a positive relationship between higher education and the odds of poverty exit.

Figure 2: Forest plot of association between higher education of household head and the odds of poverty exit
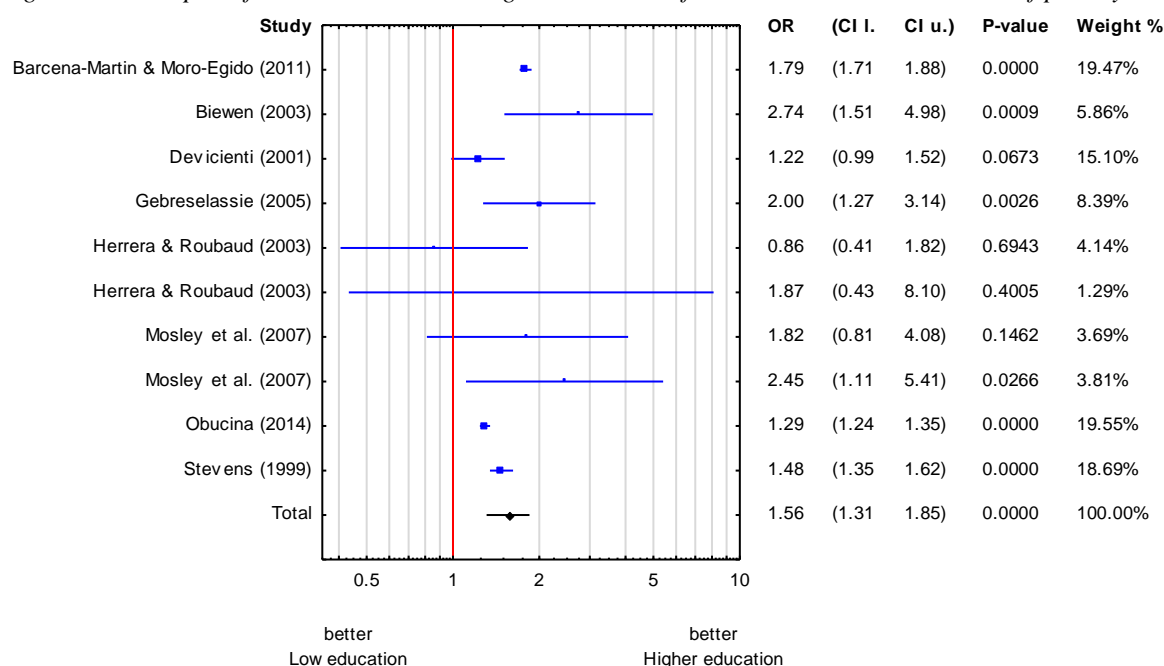
Source: (own work)

Based on the Q test the hypothesis about homogeneity should be rejected ($Q = 114.87$ and $p = 0.0000$), which shows the heterogeneity of the studies included in the meta-analysis. According to the rule of thumb suggested by Higgins the value of $I^2 = 92.17\%$ demonstrates very high heterogeneity. The choice of the random-effect model at the beginning of the meta-analysis seems to be even more justified.

Examination of publication bias was conducted. This part of the analysis allowed to answer the question if there is an association of publication probability with the significance of study results (Sterne & Harbord, 2004). To detect the publication bias funnel plot was charted (Figure 3). In the absence of bias, the plot will resemble a symmetrical, inverted funnel. It can be seen in Figure 3 the asymmetry is not very visible which may indicate that the meta-analysis is not at risk of publication bias. To test the asymmetry of the funnel plot two tests were conducted. Based on the Begg and Mazumder test ($\tau_b = -0.0476$ and $p = 0.8806$) and

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the Egger test ($b_1 = 0.3720$ and $p = 0.7195$) it can be stated that there is no evidence for publication bias.

Figure 3: Funnel plot using data from ten estimations
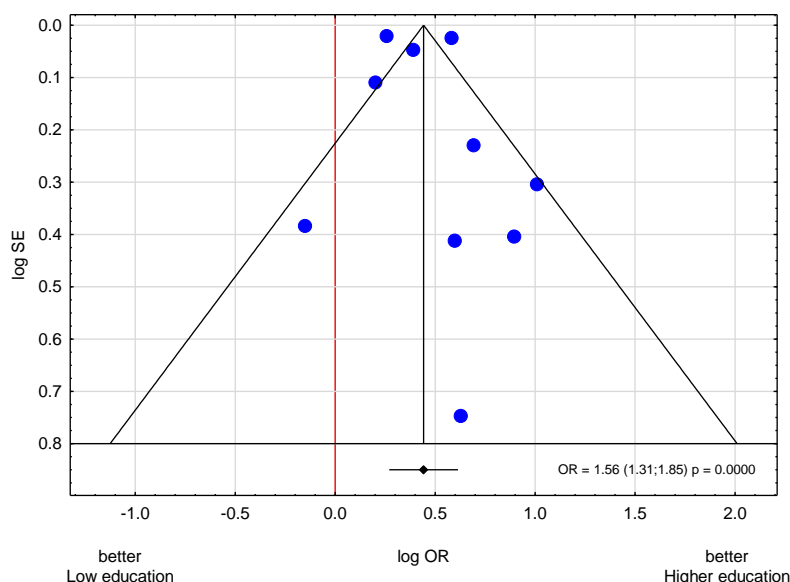
Source: (own work)

In the next step cumulative meta-analysis (a series of meta-analyses) was performed in which studies were added based on the year ending each study (Table 2). This approach allowed to assess the changes in the association between higher education and the odds of poverty exit. It can be stated that cumulative meta-analysis revealed no clear temporal changes in the magnitude of effect sizes. From 1988 to 2008 there were no significant differences in the relationship between education and the odds of poverty exit. This relationship was still the same – odds ratios were around 1.5, the results were still statistically significant. It seems that changing circumstances in the world economy, the internal situation in analyzed countries and many other factors do not have enough influence to change this relationship between higher education and the odds of poverty exit. The attention should be paid to the highest increase in standard error after adding the study of Gebreselassie (2005) – a very small sample was studied and thus standard error increased significantly (185.30%).

The last part of the analysis focused on comparison influence of higher education on the odds of poverty exit in two subgroups of countries: developed and developing. In the subgroup of developed countries were included: United States, Great Britain, Germany, Sweden, and Europe[13]. Developing countries were: Peru, Madagascar, Ethiopia, Uganda, and Zimbabwe. Results of meta-analysis in subgroups were presented in Figure 3. It should be noticed that the majority of studies focusing on developing countries (three from five studies) indicated an insignificant relationship between higher education and the odds of poverty exit. In the subgroup of developed countries, only one study indicated this kind of situation. Despite these differences association between higher education and the odds of poverty exit is statistically

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[13] Despite the differences in economic development between countries from Europe, this whole region was treated as developed. This remark concerns a study conducted by Barcena-Martin & Moro-Egido (2011).

significant in both groups of countries. Based on the conducted Z-test ($Z = -0.6077$ and $p = 0.5434$) we can say that the odds ratio in the two subgroups is similar (the difference is not statistically significant).

Table 2: Cumulative meta-analysis: end of the study (ascending)

Study	End of the study	OR	S.E.	Lower 95% CI	Upper 95% CI	P-value	Cumulative weight	Change in S.E
Stevens (1999)	1988	1.48	0.07	1.35	1.62	0.0000	18.69%	
Gebreselassie (2005)	1997	1.58	0.20	1.23	2.02	0.0003	27.08%	185.30%
Devicienti (2001)	1998	1.44	0.14	1.20	1.74	0.0001	42.18%	-31.50%
Herrera & Roubaud (2001)	1999	1.40	0.14	1.15	1.70	0.0006	46.32%	1.74%
Herrera & Roubaud (2001)	1999	1.41	0.13	1.19	1.68	0.0001	47.61%	-9.98%
Biewen (2003)	2000	1.50	0.16	1.22	1.86	0.0002	53.47%	30.44%
Mosley et al. (2007)	2005	1.51	0.15	1.24	1.84	0.0000	57.17%	-7.44%
Mosley et al. (2007)	2005	1.55	0.15	1.28	1.89	0.0000	60.98%	2.08%
Obucina (2014)	2007	1.44	0.10	1.26	1.64	0.0000	80.53%	-37.97%
Barcena-Martin & Moro-Egido (2011)	2008	1.56	0.14	1.31	1.85	0.0000	100.00%	42.68%

Source: (*own work*)

Figure 3: Forest plot of association between higher education and the odds of poverty exit in subgroups
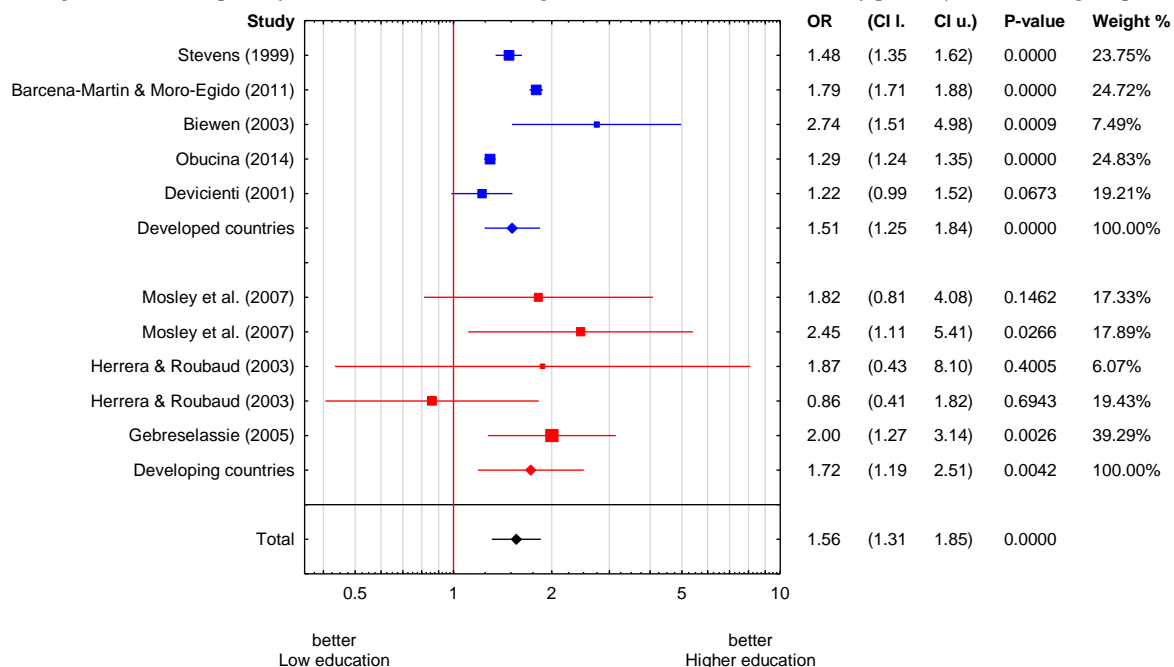
Source: (own work)

4. Conclusion

The conducted analysis allowed to state that the education level of the household head is an important determinant of poverty exit. The processes occurring in a contemporary economy, including globalization processes, seem to have no impact on the effect size. Households with better-educated heads have the higher odds to improve their material situation and to exit from poverty. This association between higher education and the odds of poverty exit was permanent – within two decades the effect size remained at the same level. In all countries which were included in the meta-analysis the effect size was similar and there was no significant difference between the two subgroups: developing and developed countries. The further research should focus on the other determinants of poverty exit which allows to indicate some specific determinants having influence only in some groups of countries.

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RELATIONSHIP BETWEEN THE CIRCULAR ECONOMY AND THE QUALITY OF LIFE IN A GLOBALIZED SOCIETY

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Abstract. The paper deals with the impact of the circular economy on the quality of life in conditions of globalization. The introductory chapter is devoted to defining the specifics of the circular economy. It emphasizes the importance that we attach to it at the stage of the globalized society. The circular economy must be regarded as a modern economic model that changes not only production methods, but also changes the lifestyle of the participants. At the stage of globalization, it has something to offer to improve the quality of life of the population of every country that works on this business philosophy and develops its potential. The evolution of the implementation of the circular economy is understood in relation to positive and negative aspects of globalization and its economic changes. Globalization brings impetus to new trends and efforts for sustainable development. The paper further defines some indicators of quality of life, especially those that the circular economy can influence. The aim of the article is to highlight the interrelationship between the attributes mentioned. It outlines the current challenges that the circular economy is helping to address. The aim of this paper is also to presently point out in the context of the circular economy how contemporary globalization significantly affects all spheres of life.

Key words: globalization, quality of life, circular economy

JEL Classification: M30, F60, J17

1. Introduction - Globalisation as permanent and critical issue of today

Globalisation has become one of the most frequent present scientific issues that resonate in a scientific as well as in a business community. The present stage of globalisation is perceived as a dynamic and at the same time imbalanced process of development that is characterised by the dominance and superiority of multinational companies and enlargening the gap between rich and poor.

Drucker also characterised globalisation as „the essential change in the world economy that causes structural shifts on international markets, in product range and business of the advanced countries (Drucker, 1986).

Globalisation should be understood as a process driven by technical progress in which the society is overwhelmed by information. In all areas, there is an international interconnection through information whithin communication whether it is economics, politics, culture or the environment. The consequence is the identification of a number of significant causal parallels

between globalisation and its positive and negative aspects, and between the challenges and solutions offered by stakeholders. According to many authors, the key parallels conditioning globalisation are most often in particular (being listed without ordering them according to importance or aspect of importance):

- worldwide expansion of international trade and growing power of international concerns;
- ecological threats;
- advance in information and communication technologies and techniques;
- international politics and demands on human rights and democracy principles;
- development of mass and indutrial culture linked with transcultural and transreligious phenomena (Salgovicova & Klincekova, 2016).

Globalisation should benefit all the layers in society without regard to their material position, it should bring social justice and equality, economic prosperity and better communication. (Murray et al., 2017; Korhonen et al., 2018) Besides the positive aspects, globalisation also brings some negative tendencies that can act as a threat to society. In order to avoid further negative impact of global economic crisis every EU member state has to find new possibilities and opportunities to keep sustainable development within the European Community. To face new challenges businesses have decided to take into account not only economic but also ecological aspects of their business activities in order to reach so-called green growth (Jacinto & Sakal, 2009). The positive tendencies of globalisation found its place in a parallel and extensive restructuring of national economies and in application of new economic models. Green growth represents an integral part of economic growth focused mainly on preservation of natural resources and environmental protection for nature generations. The topic of creation and protection of the environment rank the first among all the social issues – we still have to fight air pollution, waste disposal or high noise levels. The public is interested in creating ecological balance and renewing harmony between a man and nature (Zauskova et al., 2013).

2. Parallels between globalisation and circular economy (and its specifics)

In theory but also in praxis, we may identify several types of globalisation that helps to outline a wide spectrum of causal parallels between various areas of economic and social events. Since our paper deals with the issues of the circular economy, its specifications, parallels and penetration with the globalisation processes on the one hand, and the quality of life and life style on the other, the outcome and the basis for defining the penetration between the circular economy and globalisation can be found in the free interpretation of the following classification of globalisation according to the American sociologist Christophera Chase-Dunn:cular eco

- environmental globalisation, i.e. global threating of the eco-system and existing global environmental threats;
- cultural globalisation as a massive expansion of pro western anglo-saxon values;
- globalisation in communicaton in a new era of information technologies and thereby, linked to time-spacial compression, economic exchange and exchange of ideas and new networks;
- political globalisation understood as the institutionalisation of the international political structures (Chase-Dunn, 1999).

In particular, the first type of globalisation offers a close continuality and connection to the circular economy model. What is the simplified nature of the model? The circular economy is aimed at maintaining the value of the products, materials and resources as long as possible. (Kirchherr et al., 2018; Stewart & Niero, 2018) The essence of the circular economy is that products are at the end of their life cycle turned back into the product life cycle and at the same time the production of waste is minimised. (Kunz et al., 2018; Hopkinson et al., 2018) The fewer products end up as waste, the less materials are extracted. As a result, there is a clear set of improvements that positively impact on the environment. This process begins at the very beginning of the product lifecycle: intelligent product design and manufacturing processes that help save resources, avoid inefficient waste management and create new business opportunities. The benefits of environmental globalization for industry, businesses and citizens are evident in the following areas:

- development of more innovative and effective ways of production and consumption;
- development of more innovative and efficient forms of production and consumption;
- protecting businesses from scarce resources and volatile prices;
- optimization of waste management, which increases recycling and reduces landfilling;
- saving energy, as fewer production processes require less energy;
- environmental and climate benefits of biodiversity, air, soil and water pollution;
- development of opportunities for creating new local jobs and related social integration.

In comparison to the conventional model of the linear economy that is based on extraction, production and disposal, the circular economy is sustainable and regenerative. The so called linear model of economy that, in the past, ensured economic growth relatively successfully, seems to be for the further progress definitely unstable and socially inappropriate. The idea was to increase consumption through planned obsolescence of products (in the minds of the lay public the belief in the existence of this approach resonates so far, especially in the field of consumer electronics). In the 1950s, the "age of plastics" came into being, along with the increasing dependence on oil and the increasing waste problems. Unlike the linear model of economy characterised by transformation from raw materials to products and consequently to waste, the circular type of economy is specific and characterised by the existence of a closed loop starting with raw materials to products and going back to renewable resources.

The economic model thus defined changes not only the production methods but also mediates and changes the lifestyle of the people concerned. Regarding the concept circularity, its historical and philosophical origins can be observed. The circular economy has a differentiated basis in individual parts and countries of the world, as well as various motives of its creations. Feedback ideas about cycles in real-world systems are old and reflect different philosophical schools, making it difficult to identify whether to assign them to a specific date, or to a particular author. After the Second World War, there was a revival. The impetus for practical use of the circular economy in modern economic systems and industrial processes emerged in the late 1970s by a small number of scientists, leaders of the business sphere. The model of the circular economy synthesises several of the mainstream schools of thought. It includes Walter Stahel's economy (performance) of functional services (Stahel, 2013), William McDonough's and Michel Braungart's Cradle to Cradle design philosophy (McDonough, 2017), industrial ecology by Reid Lifset and Thomas Graedeal, natural

capitalism by Amora and Hunter Lovins and Paul Hawkens and blue economic system described by Gunter Pauli (Pauli, 2017).

The importance of the effective functioning of economy at all levels, i.e at the level of big, medium-sized and small enterprises, at the level of both organizations and individuals, globally and locally is considered to be very important for this conceptual model . The model distinguishes between technical and biological cycles. Consumption takes place only in biological cycles. Foods and biological materials are designed to be returned to the system through processes such as composting and anaerobic digestion. These cycles restore life systems such as land that provide renewable resources for the economy. Technical cycles focus mainly on material cycles and the use of renewable energy. They recover products, components, and materials by remanufacturing, reuse, repairing, or recycling. The strategy focused on durability ensures that technical products will last as long as necessary, will be easy to maintain and will have high second hand value.

The dismantling strategy means that the products and their parts can be repaired, reprocessed and recycled as a raw material for the next manufacturing process. The objectives of the circular economy can also be defined from the perspective of holistic philosophy. The essence of this approach is to change the way people live and their satisfaction so that they do not cross the borders of our planet. The ultimate goal is to understand the achievement of sustainable human development not as a phrase but as part of a lifestyle with regard to the quality of life of present and future generations. Responsible countries today want to play a positive role in global sustainable development by addressing both environmental and resource challenges in the interests of maintaining the quality of life of the population. Environmental protection represents care for the whole group of natural resources. The environment influences existence of living creatures on the Earth. Continuous devastation of the environment forces us to think about near future. The worldwide population is losing its touch with nature and a primary sectore, which forces us to rethink the values of our culture and avoid deepening the global economic crisis (Bartosikova, 2012). We consumers are able to influence the whole retail chain but only few understand how real it might be (Kollarova, 2016). Consumers are those who can force producers to change their attitude and to show that the protection of the environment is primary and the first place. Consumers are those who can get producers to change their attitude and ultimate.

3. Ouality of life concept in globalized society

The quality of life is a concept in social sciences, the content of which is the result of applying the qualitative approach in the evaluation of human life quality according to historically evolving value criteria, corresponding to the essence of man as a living, social being. The quality of life factor integrates the social and individual lives of people and represents the synthesis of interdisciplinary-linked aspects of various sciences (Hnilicova, 2005)

At first, the attention was aimed primarily at economic and social indicators of quality of life: income and material security, political freedom and independence, social justice, legal security and health care. Later on, the subjective indicators of quality of life - subjective well-being and life satisfaction - emerged. A broad international debate has gradually emerged on the quality of life. Even today, different disciplines perceive the quality of life

differently and in various ways. They represent a wide range of approaches, ranging from vague definitions such as "ability to live a normal life", through a simple and austere definition of quality of life as a complex of indexes or characteristics of man or society (usually in three areas: health, education including literacy, purchasing power of man / society), to sophisticated definitions that emphasise, e.g. the fulfillment of personal goals, happiness and satisfaction, or social benefits and preferences (Salgovicova, 2012).

From the above-mentioned is to conclude that the quality of life theory is very extensive and currently, there are several quality of life concepts. When formulating the definition of quality of life, the research from a wide range of scientific disciplines overlaps : economics, ecology, sociology, psychology, political science, and so on. There are opinion streams that identify the quality of life with subjective well-being, with a parallel distinction of at least two levels, both in the context of society and on the individual level. Examining the issue is slightly complicated by using other concepts such as lifestyle, satisfaction with life, and happiness. All these terms combine the economic, material, social, health and environmental conditions that relate to human and social development. Quality of life on the one hand represents the objective conditions for a good life and, on the other, subjective feeling of living a good life. The subjective quality of life is about wellbeing, contentment and satisfaction with the things around us. To measure it, the so-called "soft data", obtained through polls, are used. The European Commission has also systematised indicators of quality of life into groups that are made up of health, quality of job position, purchasing goods and services, leisure time opportunities, social security, chances for personality development, the quality of the physical environment, the level of the company's conceptual environmental program and its implementation in practical protection of the environment, i.e. they reflect the state of the natural and social components of the environment and opportunities for participation in social life. Quality of life is thus a phenomenon that includes as well material, as spiritual, cultural, social and individual aspects. It is a complex, abstract and multidimensional concept that defines satisfaction and happiness in life in areas that a particular person considers to be significant.

4. Quo Vadis quality of life and what can circular economy offer to improve it in globalised society?

At the present stage of the development of the society, the question of the need to combine the problems of quality of life of the population with the necessity to solve the global problems of civilization of the 21st century resonate more often. It is recognised that despite the differences in the development of individual countries in the world, there are issues that concern the whole mankind and it is, therefore, necessary to find a common platform for their solution. Regardless of the specifics of the individual definitions of quality of life, however, one fundamental fact remains uncontested: the quality of life is not only an abstract concept, the content of which needs to be widespread. Quality of life should be a strategic objective of each developed society, which must create a set of instruments not only for the health, but also for the protection of the population and the environment. It must also strengthen the confidence in the products and services that producers manufacture and the population consumes, the confidence in stopping negative impacts on the sustainability of our planet. We see significant room that can be filled by the concept of the circular economy, its development on the theoretical level and its implementation in practice. The circular

economy measures are closely linked to the key EU policy priorities and to the global sustainable development efforts. The EU Action Plan for the Circular Economy sets out a concrete action programme which introduces measures that cover the whole product lifecycle: from production and consumption to waste management and the secondary raw materials market. The circular economy is an instrument to support the EU's commitment to sustainable development.

What is the relationship between circular economy, eco-innovations in products and and marketing communication? It is trendy to use on-line communication channels and new approaches to information through various digital technologies which complement traditional marketing communication tools (Zauskova et al., 2015). Traditional marketing communication tools need to be combined with tools of modern marketing communication. For an product eco-innovations to be succesfull, it is not sufficient to launch a new product on the market as a result of an eco-innovative processes, give it an appropriate price and make it available to a customer. Succesful communication bewteen a sender and a recipient occurs when a recipient receives an accurate and concise message and behaves in accordance with sender´s expectations and beliefs (Miklencicova, 2015). Businesses can enhance consumers´ trust and enthusiasm for environmentally-friendly products by way of comprehensible and clear communication on what it means to be „eco". A message has to go through all the phases of a communication process and its basis has to be mantioned through all communication channels.

A communication campaign meeting all the above mentioned criteria can be deemed effective and practical. It is important to build up customers´ trust that eco products bring about tangible advantages to the environment while being practical and profitable in comparison with a previously used products which did not bear such environmentally-friendly features. A marketing communication strategy for eco-innovations relates to the overal environmental orientation and communication of a businesses. Communication messages in this area relate not only to material products but also to a wide range of services. They relate to the provision of health services, tourism services, education, and also activities typical of culture and worldview (Svoboda et al., 2013; Salgovicova, 2015).

Eco-innovations in a circular economy are essential and therefore businesses should dedicate their efforts, resources and energy to creating inventions and implementing an eco-innovative process endorsed by a massive marketing campaign. There is an occasion to shape a customer´s opinion by effective marketing communication tools and by way of constant education to influence ecological awareness as well as buying behaviour in favour of environmentally-friendly products (Zauskova & Grib, 2016). All this is good for improving the quality of life for consumers and the entire population.

5. Conclusion

At the current stage of the society development, the issue of quality of life is increasingly linked to the need to solve the global challenges of 21st century civilization. Every period has its rhetoric, that is, the announcement of the goals or the direction of humanity. The rhetoric of the development of science and the progress of the society, which has recently been often cited as the main objective of humanity, begins to be subordinated to the "rhetoric of the quality of life" of people. We are currently proclaiming that all our efforts should lead people

to live well, i.e to live a quality life. The development of science and new technologies, quality assurance in health care, satisfaction in personal tangible and intangible consumption, safety, etc. should serve this goals. In order for a circular economy to offer a concrete improvement in the quality of life and lifestyle of the population, each country should work with this model systematically. Its potential must be developed not in isolation but in the intentions of today's postmodern society where globalisation is perceived as a key factor in the development of the world economy (Salgovicova, 2015).

However, citizens are far from being protected against undesirable products (alcohol, clothing, food, etc.) and the level of sustainability is far from satisfactory. Therefore, the relevant legislation needs to be further developed, we need to focus on the quality of products and services in its complex features and, above all, to gain the trust of citizens and consumers. Information on market opportunities need to be made available, the attention should be directed to risks detection, and their evaluation and reporting, we need to educate people and thus, build their trust and strengthen their confidence. Generally, however, the change in the way of thinking is the most urgent precondition for the implementation of transformation ideas of the model of a circular economy.

Acknowledgement

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MODIFICATION OF DATA ENVELOPMENT ANALYSIS FOR RISK RANKING IN INTERNATIONAL BUSINESS

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Abstract. In today's economy, developing in a context of growing globalization and sharpened competition, risk assessment is vital. Organizations need instruments for risk management that would allow to integrate local and global aspects of the risks into the assessment process as well as other specifics of their businesses. At the same time, risk ranking process should adequately prioritize these risks. Compliance with such requirement is not trivial task due to different perception of the risk dimensions in different environments (i.e. on global and local levels). Moreover, managers often cannot specify the values of importance of each risk dimension, so the risk ranking in such conditions is a big challenge. In this article we use Failure mode and effects analysis (FMEA) for evaluation of the risks (managers may use other convenient approach for evaluation purposes) and Data envelopment analysis (DEA) to rank the risks even with no information on importance weights of the risk factors. We present a modification to the ranking approach so it could overcome some of the limitations of DEA. We compare the standard ranking approaches, used in FMEA and DEA with the modified approach. The proposed approach using Reference set impact (RSI) score has some advantages compared to the standard Reference set frequency (RSF) score: it has lower repeatability and higher precision. Due to the specifics of each approach we discuss their limitations - in particular cases the presented scores may over - or underestimate risks position in ranking list.

Keywords: risk ranking, Data envelopment analysis, Failure mode and effect analysis

JEL Classification: C61, C67, D24, D81, M11

1. Introduction

Risk is complex. Its value may include impact of many factors. Fast changing environments in global scale reflects over decision making process making it more challenging for entrepreneurs (Shepherd et al., 2014). Estimating and ranking risks is essential process for growing companies and organizations operating in multiple environments, such as multinational and global organizations. But there are some limitations for applying risk assessment model developed for one local business unit over the global or multinational organization. There is a need to cover the differences between the units and environments:

- Organizations operating in other markets often meet new risk factors they have not met at their own markets (Hudakova & Buganova, 2017).
- Operating a network of clusters require applying specific risk assessment model (Klucka et al., 2017).
- Weights for parameters, evaluated for a static model may differ from one local unit to another. The offshore and domestic risk factors may be very different (Nakatsu & Iacovou, 2009)
- Risk assessment requires different set of parameters, priorities to evaluate different hierarchical levels of risks. I.e. competitor analysis divided to three levels - industry, strategic group and certain competitors (Papazov & Mihaylova, 2015)
- Global supply chains suffer from the lack of a clear and adequate quantitative measure for supply chain risk that respects the characteristics of modern supply chains (Heckmann et al., 2015).

Usually risk is assessed via a set of parameters such as probability, frequency, severity, object of risk, ability of detection and other. Values of these parameters would also reflect the character of the risk. To compare risk factors in multiple environments Data Envelopment Analysis may be applied. DEA (Charnes et al., 1978) uses optimization models for comparing multifactor units called DMU (decision making unit). We propose an approach based on DEA where we review risks as multifactor DMU. Risk parameters are processed as input and output parameters for DMUs. This approach applied to innovation process can overcome some of the limitations of alternative methods:

- risk assessment via analysis of more than 2 factors;
- using custom set of parameters;
- using original units of measurement;
- working without predefined weights for the parameters;
- include ability of control over the current risk in its assessment.

These advantages may make easier the process of risk assessment of a set of business units within multinational business organization. The result of the applied approach is the assessment of each DMU participated in the comparison. Efficiency in DEA describes the state of certain DMU, in which it is located on the efficiency frontier. It means that there is no neither any other DMU, nor a weighted combination of DMUs which would dominate at least one parameter or ratio between the parameter. In the terms of risk assessment, it would mean that the current risk exceeds the rest of the risks in one parameter or in ratio of parameters. At this point of view, we should accept "efficient" in DEA risk assessment as relative value for the overall risk rank, meaning that the risk is dominating over the rest risks in a set of parameters. So we should accept "inefficient" in similar context. DEA does not include methods on collecting data. It convinces using existing data instead. DEA has not certain requirements on the structure of the input or output parameters. These specifics of DEA allow to use parameters from other methods or to combine parameters from different methods. Researchers can choose their sets of parameters for the analysis used for conventional risk assessment in one of the business units or even used in certain project. In the next example we use values received after completing FMEA analysis. Risks dataset may be presented as combination of risk datasets collected from different DMU all over the global organization. DEA efficiency score points the elements in the list of analyzed subjects, which dominate over other elements. The fact of domination of an element gives us reason to be reviewed more precisely or to be included in the decision making system by default.

2. Ranking risks in DEA

2.1 Example of DEA risk ranking

We present a simplified example of risk assessment processed by DEA including 6 risks evaluated within FMEA approach. FMEA is commonly used for risk assessment in various industries (Renu et al., 2016). Let accept that A, B, C, D, E and F are the discovered risks of an innovation process in a business organization. The evaluation process goes through estimating of three risk parameters (occurrence, severity, detection). After the risk are estimated on the given parameters, DEA can compare the risks and point dominating and dominated risks. If the risk is located on efficiency frontier it receives value "1". Such risks should be additionally reviewed by risk manager. If the risk is located under the efficiency frontier it will get lower rank in risk portfolio. The score of dominated risk is lower than 1 (for input-oriented optimization models) or higher than 1 (for output-oriented optimization models). We need to accept that any other parameters besides the described above are equal or insignificant for the discovered risks so we could provide fair risk assessment. After the expert assessment the risks get the values of the O, S and D parameters shown in Table 1.

Table 1: Estimated values of risk parameters

Risk	O	S	D
Risk A	5	4	9
Risk B	3	5	9
Risk C	1	10	2
Risk D	1	4	2
Risk E	5	8	2
Risk F	1	9	1

Source: (Authors)

The values of O, S and D are the output parameters for DEA, as the input parameters are not present in this case. DEA can be processed without input parameters - on output parameters only, or with dummy inputs, equal in every DMU in the research (Lovell & Pastor, 1999).

Figure 1: DMUs efficient frontier
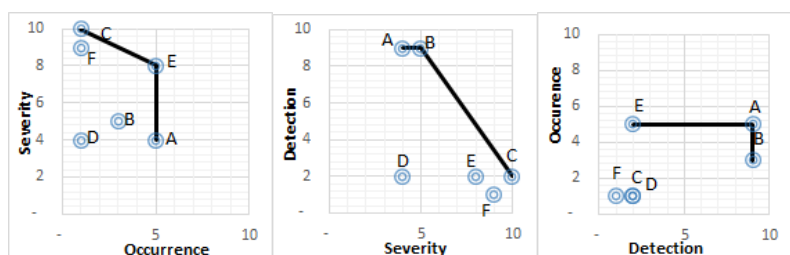
Source: (Authors)

Figure 1 demonstrates different aspects of the risks included in the research. In the case of 3 parameters (occurrence, severity, detection) there are 3 possible unique relations between them: occurrence to severity; severity to detection; detection to occurrence.

The count of unique relations increases significantly after increasing of the parameters count[14]. We apply output-oriented CCR optimization model (Zhu, 2009) for the evaluated risks. After applying the DEA model the efficiency frontier has been built. Each relation builds its own frontier. Each element on the efficient frontier is an optimal decision. There are possible situations when the actual position on the frontier doesn't provide the dominant position to specific DMU. DEA can calculate slacks for its input or output parameters to eliminate such inefficiency (Tone, 2001). Each optimal decision is dominant in its category. In the context of risk assessment, we convince that the 'optimal decision' in the analysis is the risk, which dominates over other risks with its parameters values. Thus the risks on the efficient frontier would be suggested for active management, applying strict monitoring or more precise analysis. DEA points the efficiency scores:

Table 2: DEA results on 6 risks, 3 parameters, CCR model

Risk	Effic. score
Risk A	1.00
Risk B	1.00
Risk C	1.00
Risk D	2.06
Risk E	1.00
Risk F	1.10

Source: (Authors)

DEA iteratively choose each risk, compares its parameters with the parameters of other risks. If the risk is dominated DEA points the distance of the risk to the efficiency frontier. Risks A, B, C and E are located on the efficiency frontier. These risks are dominating. They will be suggested to be included in the main risk portfolio. Risks D and F will be positioned in the bottom part of the risk ranking list. Risk D has efficiency score 2.06. It means, that there is a point on the efficiency frontier, that has 2.06 times better results. Thus the overall mark for the risk is 48%.

Figure 2: Projection of risk D on the efficiency frontier
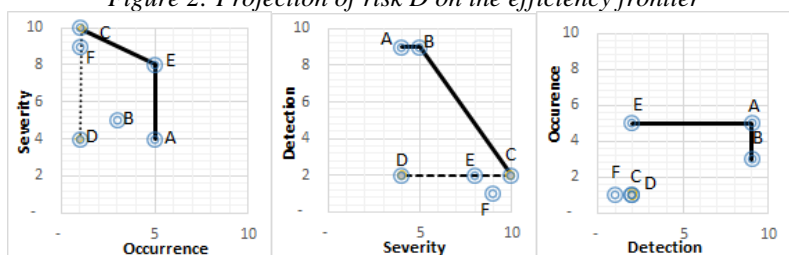
Source: (Authors)

The projection of risk D on the efficiency frontier is point D', which is dummy risk, created by DEA for the needs of comparison. The values of its parameters can be calculated by weighted sum of other risks (D' use references to risks A, B and C in its weighted set).

$$D' = A*0.23 + B*0.07 + C*0.70 + D*0 + E*0 + F*0 \qquad (1)$$

This way DEA shows all risks, that have absolute and comparative advantages for the given risk. It can help when we make future analysis for managing groups of risks within a

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[14] The count of unique relations equals r=(m+s)!/2, where r - count of unique relations, m - inputs count, s - output count

category of similar risks or initiate additional round for ranking the risks inside this category
to include them in the portfolio of risk management program.

Table 3: Values of the parameters of inefficient DMUs D and F and their efficient dummy points D' and F'

Risk	O	S	D		Risk	O	S	D
Risk D	1	4	2	< =	D'	1.11	9.94	2
Risk F	1	9	1	< =	F'	1.11	9.95	2

Source: (Authors)

As we see on Figure 3 risk F is dominated by efficiency frontier. Nevertheless, its location
is close to the frontier. Efficiency score for F is 1.10 and the final mark is 90% (1/1.10).

Fig.3. Projection of risk F on the efficiency frontier
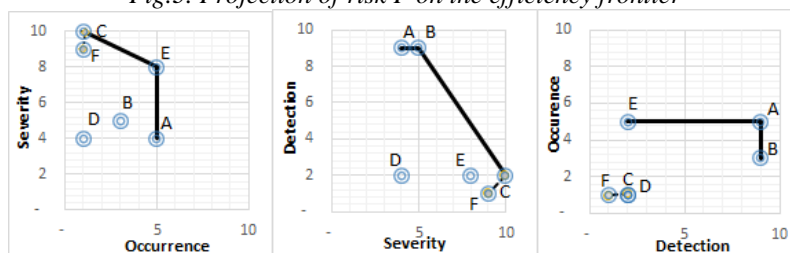
Source: (Authors)

Parameters of point F' are calculated by weighted sum of other risks (F' mainly use risks C
and E in its reference set).

$$F' = A*0 + B*0 + C*0.97 + D*0 + E*0.03 + F*0$$
$$(2)$$

2.2 Ranking methods used in FMEA

Classical FMEA prioritizes risks using Risk Priority Number (RPN). This score is built by
multiplying the values of O, S and D parameters.

$$RPN = O * S * D \qquad (3)$$

Table 4. Risk ranks by RPN

Rank	Risk	RPN score	DEA score
1	Risk A	180	100%
2	Risk B	135	100%
3	Risk E	80	100%
4	Risk C	20	100%
5	Risk F	9	90%
6	Risk D	8	48%

Source: (Authors)

Though RPN has known limitations (Chang et al., 2012), it is the main instrument for risk
ranking in FMEA. The risks are prioritized as shown in Table 4. The results based on DEA
efficiency scores don't have any sequential differences in this case. It may be used as
additional score for precise risk portfolio analysis.

2.3 Ranking methods used in DEA

Using the main DEA result score - efficiency score - may help to conduct an efficiency
based ranking list. This approach will only rank inefficient DMUs. All the efficient DMUs

have score 100%. Because of lack of information about priorities of the parameters itself we cannot declare that the risks with score 100% are most important for the project. But managers can make their assessments before they receive this information. Chang et al. purposed using DEA efficiency score within FMEA risk ranking as additional instrument for dealing with risks with the same RPN score. Conventional DEA offers no instruments for ranking efficient DMUs (Adler et al., 2002). Researchers need to apply additional techniques to rank the models (Aldamak & Zolfaghari, 2017). One of the additional instruments, commonly used for ranking purposes within DEA is Reference set frequency (RSF). It shows how many times an efficient state has been part of an inefficient state's reference set. The higher the frequency with which an efficient unit appears in reference sets, the more likely it is that it is an exemplar of good performance. RSF score is integrated in many software packages for DEA (Yao, 2010). RSF shows the frequency of occurring the particular DMU in reference sets of inefficient DMUs. This approach has some disadvantages:

- doesn't reflect the impact of a certain DMU in each reference set (only frequency);
- high frequency of same scores (i.e. lot of DMUs may receive RSF score = 2, that doesn't ultimately resolve the ranking problem);
- if there is a set of DMUs with identical parameter values DEA will probably include only one of them in the reference set. Respectively only one of them will receive additional RSF score.

RSF is cumulated score, appending an additional score to the DMU after each participation in the reference sets, founded by DEA. I.e. risk C will receive RSF score 3, as it participates in 3 reference sets: for risks C, D and F. We suggest using the cumulative sum of weights (RSI score) as alternative to RSF. It is similar to RSF, but has some advantages over it. It reflects the impact of an efficient DMU in the reference sets of all DMUs. Thus the probability of getting same scores is significantly lower than with RSF. The disadvantage regarding scoring DMUs with identical parameters is still present. RSI can be applied in ranking combined with RSF or independently. The process of ranking the risk in DEA is shown on Figure 4.

Fig.4 The logic scheme of DEA ranking process using RSI or RSF scores
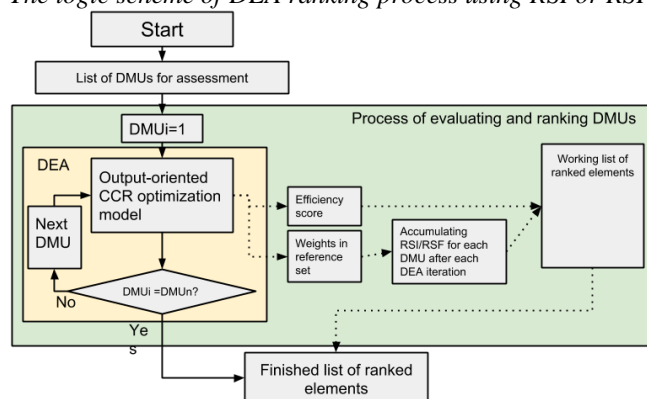
Source: (Authors)

For example, sum of the weights (RSI) for risk C = 2.67. This scores comes from impact weights of risk C on following reference sets: for risk C - 1.00; for risk D - 0.70; for risk F - 0.97. The risk ranking results are shown in Table 5. The higher positions mean more important the risk is for the project. The differences between DEA and FMEA rankings in this particular case: risk C has moved from 4th position to the 1st. It has happened because

inefficient risks (D and F) see risk C as main dominant, and their reference sets contribute to higher score for risk C. It may be right in situation, when we want to rank the elements giving the higher priority to DMUs from the biggest represented category.

Table 5. Risk ranking list

Rank	Risk	O	S	D	RPN	DEA score	RSF	RSI
1	Risk C	1	10	2	20	100%	3	2.67
2	Risk A	5	4	9	180	100%	2	1.23
3	Risk B	3	5	9	135	100%	2	1.07
4	Risk E	5	8	2	80	100%	2	1.03
5	Risk F	1	9	1	9	90%	0	0.00
6	Risk D	1	4	2	8	48%	0	0.00

Source: (Authors)

2.4 Limitations

Still we have to admit the limitations of such approach:
1. RSF and RSI scores overestimate DMUs from the biggest represented category.
2. RSF and RSI score underestimate DMUs from poorest represented categories.
3. RSF and RSI score underestimate the "second-best" DMU from each category, as the scores are usually taken by the leading DMU.
4. RSF and RSI scores have strong dependence on count and distribution of inefficient DMUs. In other words, each adding inefficient DMUs to the ranking list will increase the score of the referred efficient DMU, and opposite.

3. Conclusion

DEA has capabilities for processing risk assessment operation especially in multi environment situations, such as risk assessment for global markets. It may be used as independent approach, or as helping instrument for another approach. DEA has capabilities for ranking risks, evaluated by most of risk evaluating approaches. The main reason to use DEA for risk ranking purposes is when risk managers have no information about the priority weights for the evaluated parameters, so there is no possibility to calculate the weighted scores for the risks. The second main reason for applying it in multinational organization is its ability to deal with different priorities for the parameters, as they may differ from one local unit to another. DEA may use efficiency score for ranking inefficient and RSF and/or RSI scores for ranking efficient risks. DEA may be used as additional instrument for resolving conflicts in other approaches for ranking. RSI score has some advantages over the commonly used RSF score. It ranks more precisely compared to RSF. Still RSF and RSI have common disadvantages. Some of them may be overcome by processing more precise analysis on parameters of each DMU and the distribution of the weights, generated by DEA.

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APPLYING THE GLOBAL PRINCIPLES OF THE SUSTAINABLE DEVELOPMENT FOR BETTER QUALITY OF LIFE

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Abstract. Improving the quality of life is a global strategic goal. It is the long-lasting goal, which is supported by the projects at the national, European and even the world level. International project 'Healthy Cities' represents active movement of the European municipalities which systematically proceed with the health of their citizens. A conception of the 'Corporate Social Responsibility' motivates organizations and municipalities to contribute the sustainable development and urge better quality of life of their employees, local commonwealth and the society. Help of various tools does concrete realization of the recommended principles. There is, for example 'Agenda 21'with emphasis on planning the further development of the region in harmony with principles of the sustainable development and with emphasis on public involvement. Another method is 'CAF' for performing continuous self-assessment. Application of these principles at the level of municipalities' administration should contribute to the regional development and to the improvement of the quality of life of their citizens. Its own realization is done at bigger municipalities where specific workers exactly trained for it could do the agenda. Small municipalities do not have these possibilities – they have low knowledge about the above-mentioned procedures or are afraid of the situation that agenda might be complex or unusable for them. This text is aimed at these small municipalities and to the assessment of the procedures and usable activities, which might contribute to good mastering in the meaning of the global strategic goal, which is better quality of life.

Keywords: quality of life, sustainable development, Local Agenda 21, CAF

JEL Classification: H11, H70, H83, R5

1. Introduction

Providing the inhabitants' life quality is a priority while municipality administration. The strategic framework for the Czech Republic's development called the 'Czech Republic 2030' specifies that the quality of life could not be measured only by the economic indicators, its evaluation needs to study other aspects of human life e.g. health, balance between the working life and private life, civic engagement, the quality of the environment etc. (UVCR, 2017). This framework emphasizes inseparability of the life quality and sustainability. Effort about applying the principles of the sustainable development while municipalities'

administration should contribute to the region development and to their inhabitants' quality of life.

2. Methodological framework

Conception of the sustainable development represents model of the society development, which reflects the natural environmental limits of the economic growth. Basic definition of this concept could be found in the document 'Our common future', committee WCED (UN World Commission on Environment and Development), where the definition is mentioned: 'Sustainable development is development that meets the needs of the present without compromising the ability of the future generations to meet their own needs'.

2.1 Approaches and Tools

Conception of the sustainable development is developed within the framework of the strategic documents at the international and also national levels, programmes and tools are proposed, there is an effort about the concrete projects realization. Basic aspects of the whole problematic are shown in Figure 1.

Figure 1: Basic aspects of Sustainable Development
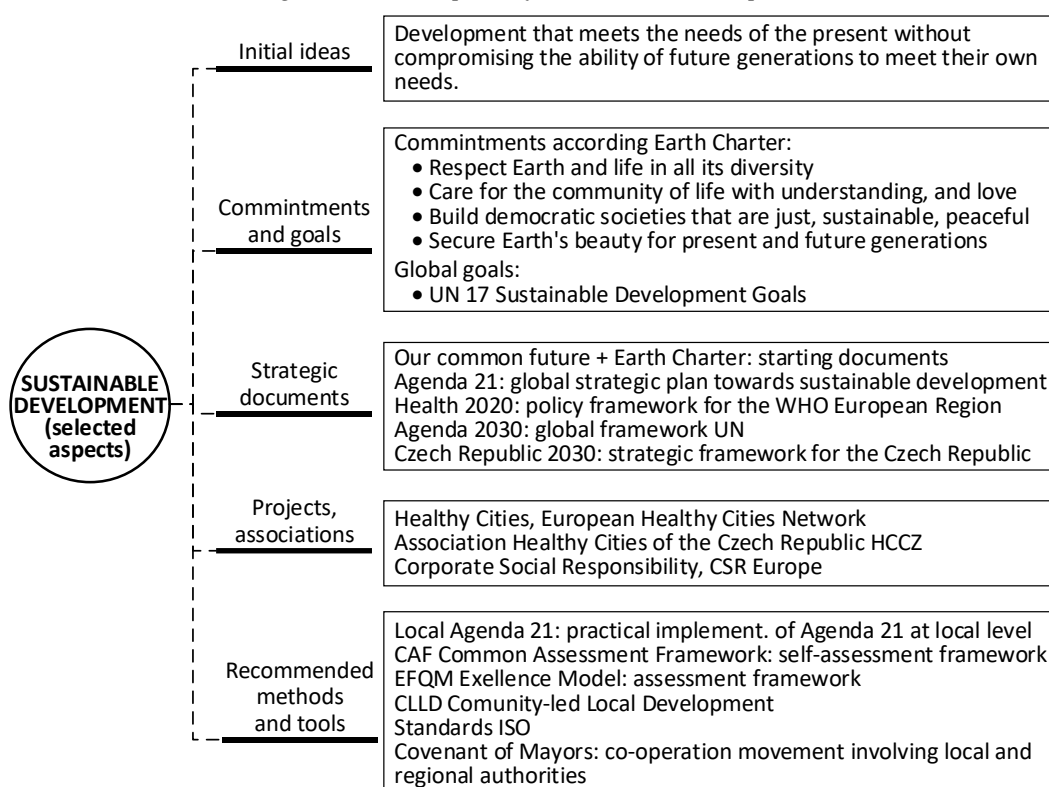
Source: (own processing)

International project 'Healthy Cities' represents the movement of the European municipalities and regions, which systematically goes towards the quality of life and health of their inhabitants. Participating cities associate to European Healthy Cities Network, where there are at the moment 1.400 Healthy cities in 30 countries (WHO, 2018). The good point is that the members (in national network or within the international cooperation) can exchange

their examples of the good practise (Krbova, 2017). Project is developed in accordance with actual accepted strategic documents; there belong e.g. – the global framework '2030 Agenda for Sustainable Development' and its '17 Sustainable Development Goals' (UN, 2015), the policy framework for the WHO European Region – 'The Health 2020, the strategic framework 'Czech Republic 2030' (UVCR, 2017). Similarly, the conception 'Corporate Social Responsibility' (CSR) is the platform for those organisations looking to enhance sustainable growth and positively contribute to society (CSR, 2015). CSR Europe is the European hub incubating multi-stakeholder initiatives that tackle the UN 2030 Agenda for Sustainable Development (UN, 2015). For the needs of the public administration in the Czech Republic was created 'Manual CSR' (NSPK, 2016), which content corresponds with motto of the document CSR Enterprise 2020 Manifesto – 'Business and Governments working together for a more inclusive and sustainable society by putting their words into action '(CSR, 2015). The purpose is to provide inspiration to the organizations of the public administrations, how to begin with socially responsible activities or how to deepen them, which participants to start the cooperation with and to make their activities more effective. Conception of the sustainable development is reflected also within the Smart City concept as the advancement in technology bring new possibilities how to make life more comfortable (Kopackova & Libalova, 2017).

Project 'Healthy Cities' or the conception CSR can be realized by many tools, such as e.g. Local Agenda 21 or Common Assessment Framework (CAF), Model excellence EFQM, standard ISO 9001. Agenda 21 is a global comprehensive plan of action to be taken globally, nationally and locally by organizations of the United Nations System, Governments, and Major Groups in every area in which human impacts on the environment (UN, 1992), (Navarro-Espigares et. al, 2018). The CAF model (Common Assessment Framework) is one of the good tools for continuous improvement of the efficiency and effectiveness of local governments (Flaska et. al., 2015). The CAF model sets the assessments criteria the application of which should help a public sector organization to increase its performance.

2.2 Global aims, local procedures

Agenda 21 is a global strategy; cities and human settlements are critical sites for implementation of these universal global objectives, indicating the need for local action that serves global and local interests (Fenton & Gustafsson, 2017). Local Agenda 21 (LA21) is a practical tool for applying concrete principles of the sustainable development in the local conditions. Basic part of the procedure LA21 is expressed in Figure no. 2.

Figure 2: Parts of Local Agenda 21
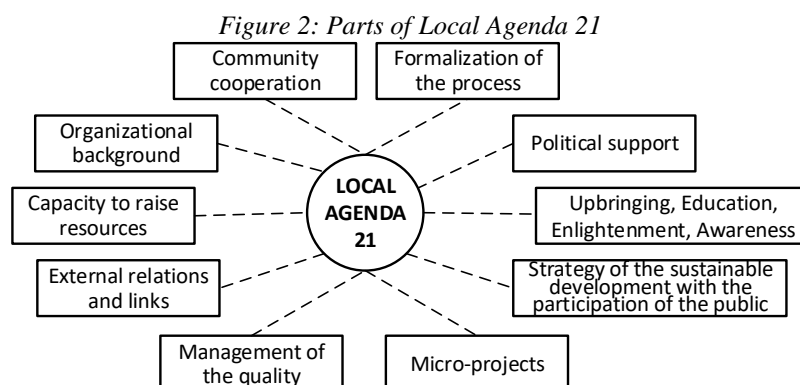
Source: (own processing, based on LA21, 2003)

The establishment of LA21s in many countries has exposed that the impetus of local authorities to transit to sustainable social, economic and environmental practices is vital but still not sufficient; however, the agenda's vision has caused a number of innovations in municipal policies in environmental, social and economic terms (Pinar-Alvarez, 2017). Also Czech Republic has a growing number of municipalities and regions that work with Local Agenda 21, its implementation is supported financially and methodically by national institutions (Vochozkova & Trhlinova, 2016). Public local governance has to combine policy, data governance and decision-making (Lnenicka et. al., 2016). The regions have systematically support the quality of public administration with respect to the sustainable development and health support, actively ask the inhabitants about their opinion. Citizen participation is very important, state and local governments have to be interested not only in improving their performance but also in maintaining public confidence in the implementation of public services (Suebvises, 2018). Governing sustainability should be about finding creative ways for opening spaces for participation and change, that is, for creating alternative ideas, practices, and social relations (Wittmayer et. al., 2016). An initiator of the process can be a local administration, or a non-profitable organization or a group of people, who are involved in the healthy regional development. It depends on the structure of the process – if the process will be viable and if the principles of the sustainable development will be applied in everyday people's practice, mainly in decision making process in the local administration.

3. Case study – an application of the chosen tools of the sustainable development in the selected municipalities

There are about 6.250 municipalities in the Czech Republic, which run the local public administration. Association Healthy Cities of the Czech Republic has at the present about 130 members (however with regional influence for 50% of the population (HCCZ, 2018). Yet the ratios of 6.250 municipalities to 130 connected subjects indicate that most cities are not connected to the systematic orientation to the quality of life improvement. The authors of the text realized the project, which aim was – to prepare procedure for selected villages for the active implementation of the chosen quality principles. Project had following steps – 1st Mapping the present situation (mainly with focus on small villages), 2nd Selection of the municipalities, 3rd Decision about appropriate principles of the quality and their implementation using the suitable tools.

3.1 Mapping the present situation

The project was aimed at the small villages because of the fact, that the small villages are the majority in the Czech Republic (in the CR 88% of the villages has up to 2.000 inhabitants, 96% of the municipalities has up to 6.000 inhabitants). Present bases were established after the discussion with various representatives of the municipalities:

- Self-rules of the small villages mainly do not think about the implementation of the 'state conception of the quality' (e.g. LA21), for the content and capacity reasons.
- The villages realize 'their program of the quality', such as projects about waste sorting and recycling, or the villages are the members of the voluntary union etc. However, mostly municipalities do not have arguments, by which can be proved, that the local public administration is provided effectively and with quality for the local electors.

3.2 Selection of the municipalities

After the initial discussions with the representatives of the various municipalities two villages were chosen with different size in terms of the number of their inhabitants. First village with about 600 inhabitants is a type 'village of the Ist degree', second village with about 5.700 inhabitants is the type 'village of the IInd degree' (with an authorized municipal office). Representatives of both villages had minimal information about 'Healthy Cities' or about tools LA21, but they showed interest in this problematic.

3.3 Decision about the appropriate principles of the quality of life and their implementation using the suitable tools

The aim for the villages was defined as – the village wants to become 'Healthy City' and thanks to it help with improving the quality of life of their inhabitants. Basic focus was defined as – a key role has communication between the public administration and public, this communication should lead towards the public involvement into planning and decision making about the future of the village. Based on this focus was decided that procedures should be combined from two tools – LA21 and CAF. The reason for CAF is that this framework proposes repeated evaluation of the monitored procedures (Simonova & Novak, 2016). The suggested procedure is shown in the scheme no. 3.

Figure 3: Interconnecting LA21 and CAF
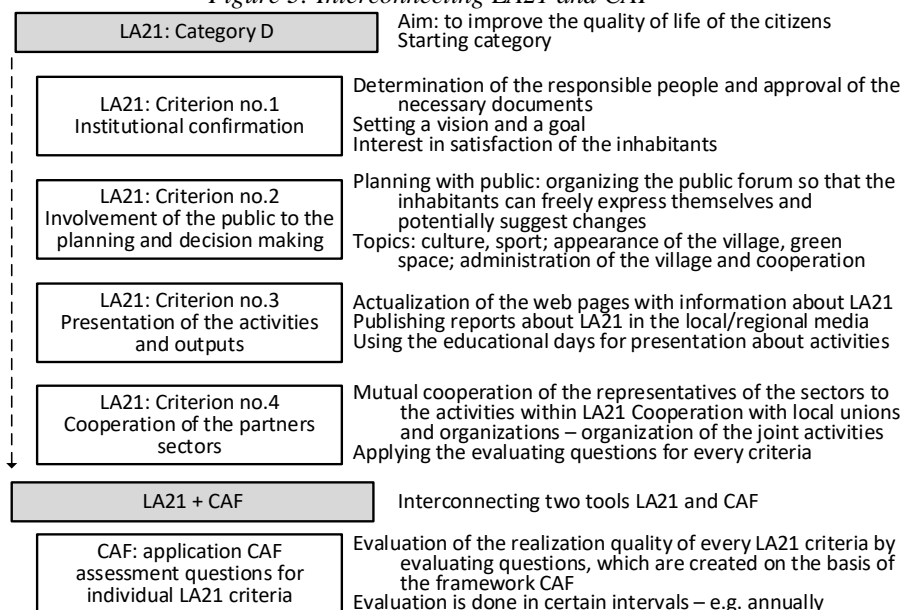
Source: (own processing)

From the tool LA21 was mainly decided to focus on the category D. It is the category 'start', which represents beginning of the process for starting the principles of the sustainable development. The outputs from this category are then connected to the selected evaluation criteria. These criteria are set on the basis of the evaluation framework CAF.

The most important part is to interconnect criteria LA21 with evaluating questions, which are created on the basis of principles evaluating the framework CAF. In the project there was suggested set of the evaluating questions, where every criterion has defined several questions. The examples of the evaluating questions are in the Table 1.

Table 1: The examples of the evaluating questions

LA21 criterion	Examples of CAF evaluating questions
Active involvement of the public to the fields of planning and decision making	- Does the town meet its inhabitants to fnd out their satisfaction? - Do you realize activites on the basis of the inhabitants' requirements? - Does the office provide all possible information about what is happening in the town? - Does the office have an asset for the society from the point of view of the sustainable development? - Are the inhabitants happy with the environment in the town?
Presentation of the activities and outputs of LA21	Does the office accept and realize incentives for improving the accessibility, acuracy and transparency of the information on the web for the inhabitants?
Cooperation of the public sector and civic sector and business sector	- Do the inhabitants possibily involve into suggesting and providing services or into decision making proceses? - Do you organize educational days for the inhabitants when celebrate the day? - Do you conduct a public opinion poll about the reputation of the office? - How many activities does the office realized in cooperation with the relevant organization or the representatives of the public? - Do you support the international developing projects?

Source: (own processing)

Set of the questions does not need to be complete, because evaluating questions might be changed on the basis of situation at every village separately. However, it is essential for every criterion to be verified like this. An import for the evaluating via CAF is that every claim must be proved (e.g. realized event, record from the solved complaint, published article in the periodic, accountant statement etc.). On the basis of the existence or the non-existence of the proof is then determined present degree of the criterion meeting. Then there are suggested some activities, which will help with the improvement of the quality of every criterion (e.g. providing more information to the media, looking for the incentives from the inhabitants etc.). The sense of this procedure is that at the following evaluation – e.g. after one year time – the criterion will gain higher quality.

4. Conclusion and Discussion

Improving the quality of life of the inhabitants is a global goal when administrate the region. Requirements of the sustainable development are declared for many years at the global (international) as well as local (regional) levels within the strategic documents. There are some international projects where there are recommended some practical tools for the concrete implementation of the principles of the sustainable development. However, the real situation of the municipalities does not reflect this effort. In the Czech Republic exists about 6.250 municipalities, but only 130 of them expressed their effort to systematic heading forwards the 'Healthy Cities', i.e. 130 members of HCCZ association (when the member must not be a municipality itself, but part of the city or Interest Action Group). Situation is that most villages do not think about the involvement into state conception heading towards the quality of life of the inhabitants. Some representatives of the villages are on the other hand persuaded, that they do maximum for their villages (realize projects towards waste sorting and recycling of the waste, they are involved into activities of the micro-region, support the projects oriented to children or seniors, together with some local groups they organize some social meetings such as balls or concerts with the local groups etc.). The villages consider

unnecessary to join the state conception of the sustainable development, or better say that they do not have any idea of the concrete possibilities of this conception and about the benefits of the recommended tools. This emerged from the discussions with some representatives of the villages within the project by the authors of this text, which was focused on this problematics and was oriented especially to the small villages. The project had three main aspects. First aspect was, that the key role was determined for the development of the communication between the public administration and public, mainly for gaining opinions of the inhabitants and their involvement to the decision making process of the village. Second aspect was to emphasize the necessity of the systematic access so that the administrations would proceed in accordance with the aimed programme oriented to the quality of life and the sustainable development, in this case in accordance with the selected criteria of the tools LA21. Third aspect was that it is necessary to verify realized activities somehow. Therefore it was suggested the combination of LA21 with the principles of the evaluated framework CAF. Based on the framework CAF were suggested evaluating questions, so that every criterion LA21 could be objectively evaluated and that the incentives would be gained for improving this criterion. At the end of the project was stated that realization of the concrete activities is not at all burden for the villages, because some of the recommended activities are already done by the villages or were done before. However, there was the lack of method of this realization. Very surprising for the villages were two findings. Firstly, villages mainly depreciated discussion; they only informed the inhabitants about the plans, but do not gain any incentives from them or any feedback (e.g. via public forum). Secondly, they depreciated evaluation of the quality of the realized activities in the village (they assumed that effort must mean the quality). The project documented that the realization of the conception of the sustainable development is depended on the understandable procedure to the village including the explanation of the assets and the possibilities of the realized tools. So that this procedure means the asset for the villages and their inhabitants what to do with the quality of life and the sustainable development, it is necessary to concentrate on three linked key elements: method – communication – verification. For the verification was suggested LA21 principles linked with principles of the evaluating framework CAF.

Acknowledgment

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IMPACT OF GLOBALIZATION ON SELECTED QUALITY OF LIFE INDICATORS

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Abstract. Changes in the society, caused by the process of globalization, are reflected in various indicators of the quality of life. In the context of globalization, the socio-economic situation and the security situation, expressed through indicators, are among the most important aspects of quality of life. The security indicators and social component of socio-economic indicators are closely interconnected. Proof of the connection is the crime, which is one of the most important indicators of both the security and social situation in the society. The emergence of crime is influenced by several factors including the socio-economic situation of the population, the level of achieved education in the population, legal standards and the level of legal awareness of the population, but also in the context of globalization, by immigration and migration. The paper deals with the investigation of crime committed in Slovakia by citizens of other nationalities. The aim of the paper is to examine the impact of the process of globalization and open borders on the security situation expressed by crime. Research results in the form of proposals can be used to develop crime prevention programmes and projects focused on the elimination of the crimes committing by citizens of other nationalities. This should eventually lead to the decline of the crimes committed by citizens of other nationalities and increase the protection of persons and property.

Keywords: globalization, security, crime, quality of life indicators

JEL Classification: F52, H55, K14

1. Introduction

The process of globalization in which the world is today, brings many positive. However, in addition to the positive, the negative aspects of globalization are beginning to emerge. One of the most important negative aspect of the process of globalization is the question of security. The issue of security in the context of globalization is addressed by many national as well as international organizations. The state of security can be expressed by subjective and objective security indicators. These indicators are one part of exploring the quality of people's life (Stofkova & Stofko, 2016). Subjective security indicators are closely linked to socio-economic indicators of quality of people's life. These indicators express the population's view on the security situation in a particular security environment. In addition to subjective security indicators, objective security indicators can be explored. By their expression, it is possible to determine the objective state of the security situation in a

particular security environment. Objective security indicators can be exploring through recorded crime on a given territory (Kudrina & Omelyanenko, 2018).

In connection with the process of globalization, in the European Union there has been an opening of borders. This has resulted to the free movement of persons and goods within the Schengen area, of which Slovakia is also a member. However, in recent years, there has been a phenomenon of illegal migration of the population into the Schengen area, against which some states have begun to defend themselves by restoring controls at selected border crossing points (Butek & Stofkova, 2016). One of the arguments of states that do not want to accept migrants in their territory is the threat of terrorist attacks and the deterioration of the security situation (Chua, 2018). Slovakia belongs among the states that support the argument. However, it is necessary to verify the development of the crime committed by members of another nationality in the territory of Slovakia.

2. Crime and crime prevention

Crime is a negative social phenomenon that disturbs the harmonious development of society, the valid legal norms, the accepted moral values of society, and the desirable development of the personality and society as a whole (Gaspierik, 2010). It is a negative socio-pathological phenomenon that causes fear, uncertainty, panic and mistrust, has a negative impact on the life and health of the victims and causes physical, psychological and social harm (Beck & Park, 2018).

Crime can be defined in two ways (Agan & Starr, 2018):
- Legal perception of crime – crime represents all actions that are sanctioned by criminal law,
- Sociological perception of crime – crime is represented not only by actions that are sanctioned by criminal law, but also by another social negative phenomenon which are not sanctioned (e.g. prostitution, alcoholism, drug addiction).

Crime can be judged from a variety of perspectives on the basis of criminological indicators of crime. These criminological indicators of crime include the state of crime, the structure of crime, the level of crime, the dynamics of crime and the trend of crime development.

Combating crime (also crime control) can be implemented through prevention and repression. Crime prevention is a purposeful, planned, coordinated and comprehensive action on the causes and conditions that trigger or enable crime and other anti-social activities with the purpose to prevent and suppress them (Act No. 202/2008 Coll.). Crime repression means the suppression of social and pathological phenomena through legal means to prevent the preparation and committing of these phenomena, as well as the limitation of the rights and freedoms of offenders through a comprehensive system of measures of law enforcement agencies (police, prosecutors, courts) (Eck, 2017). Preventive measures create the conditions for potential offenders to show the right path, or make it more difficult for them to commit crimes (Sudakova & Nomokonov, 2018). If preventive measures are ineffective and crime activity occurs, repression takes place. Depending on whom or what the crimes were committed, they can be divided. General crime is made up of four types of crime – violent, moral, property, and other crime (Kahn et al., 2018). In addition, there are two more types of

crime – remaining and economic crime (Elsner & Isphording, 2018). Figure 1 shows the development of individual types of committed crime in Slovakia.

Figure 1: Development of committed crimes in Slovakia
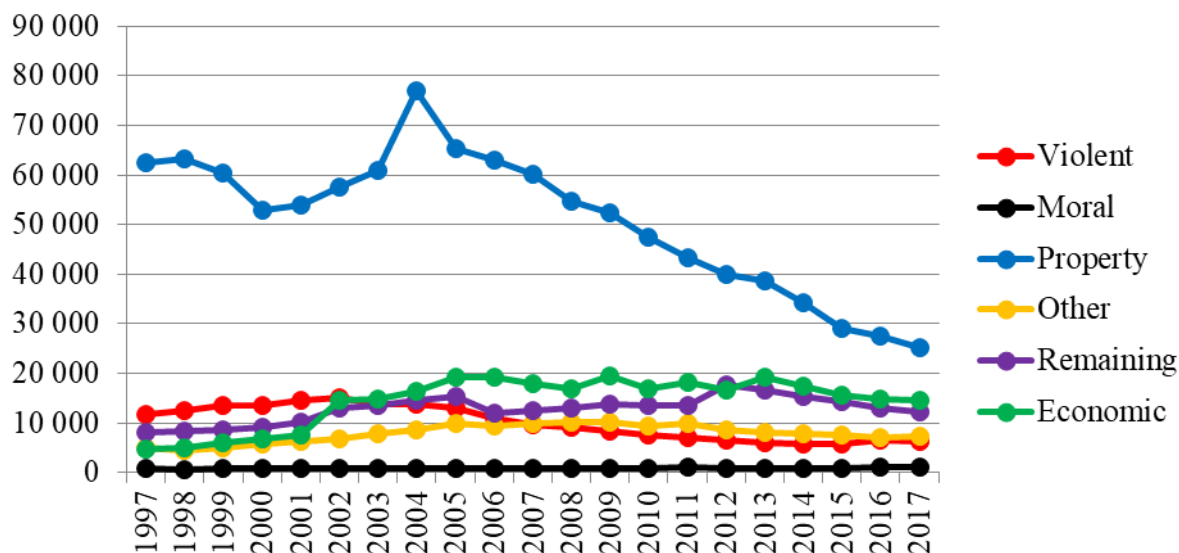
Source: (Soltes et al., 2014)

The total amount of committed crime in Slovakia is decreasing every year. The largest share on total crime have property crimes. However, the number of property crimes decreases every year and approaches another types of crime. The second most common types of crimes are economic crimes, followed by the remaining crimes. Remaining crimes can include crimes related to road accidents, threats to addictive substances, military offenses, crimes against the republic and cybercrimes (Stofkova et al., 2015). This type of crime is followed by violent crimes and other crimes. Other crimes can be understood as crimes related to harassment, setting up fires, drugs, or illicit arming. Moral crimes are one of the fewest types of crimes, but in recent times the number of moral crimes has risen slightly.

In addition to psychological and physical damage, each type of crime also causes economic damage. The greatest economic damage is caused by economic crimes, which is followed (with a significant gap) by violent and property crimes.

3. Tourism in Slovakia

Slovakia is divided into 8 parts, which approximately belong to the area around the eight largest cities. These parts are named after these cities. The most visited cities in Slovakia are mainly the largest cities. From the regional point of view, among the popular tourist regions of Slovakia belong the Tatras, Orava, Liptov and Spiš regions. Tourists in Slovakia most often search for castles and chateaux, caves, monuments, spa and wellness, as well as folklore.

In addition to tourists, Slovakia has been increasingly searching for citizens of other nationalities looking for job opportunities lately. At present, unemployment is historically the lowest in Slovakia. Businesses have an increasing problem finding the workforce for less qualified jobs (Reuber et al., 2018). For this reason, they are forced to look for new employees among citizens of other countries (Robinson, 2018). Figure 2 shows the development of the number of Slovakia visitors from the most frequent countries.

Figure 2: Development of the number of Slovakia visitors from the most frequent countries
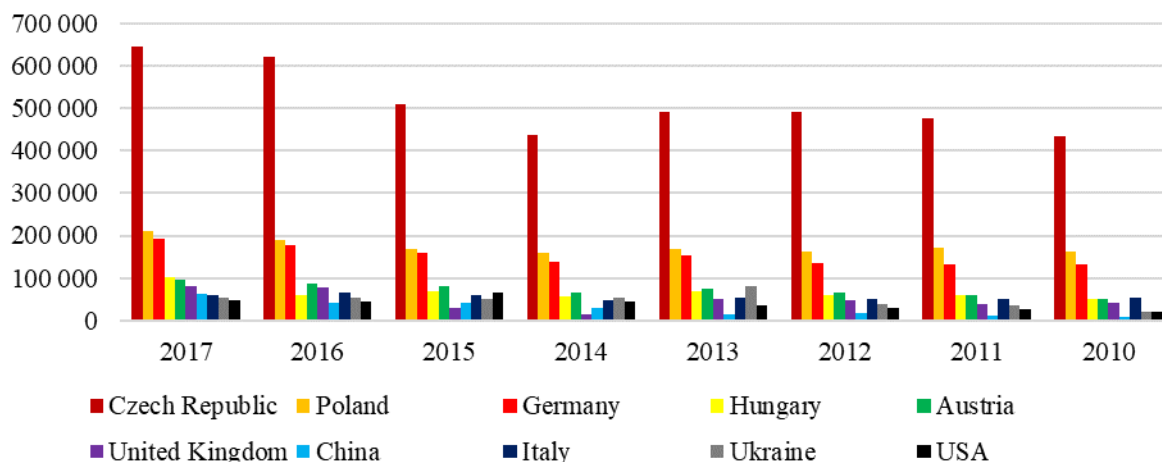
Source: (Ministry of transport and construction of the Slovak republic, 2018)

The number of visitors to Slovakia is growing every year. In 2016 and 2017 Slovakia visited more than 600,000 inhabitants of the Czech Republic. With a considerable distance from the Czech Republic, visitors from Poland and Germany are long-held for the second and third place. Among citizens from other countries which most visit Slovakia belong Hungary, Austria, the United Kingdom, China, Italy, Ukraine and the United States. In the past, Slovakia has been frequently searched also by citizens of Russia and France.

4. Analysis of crime committed by foreigners in Slovakia

Exploring the crime of foreigners in Slovakia is very complex. The number of crimes committed by foreigners depends on a number of factors, with tourism and the number of Slovakia visitors belong to one of the most important criteria (Boivin & Felson, 2018). Figure 3 shows the development of crime committed in Slovakia by foreigners. For simplification, foreigners are included in groups, according to the continents to which their country belongs.

Figure 3: Development of recorded crimes committed by foreigners in Slovakia
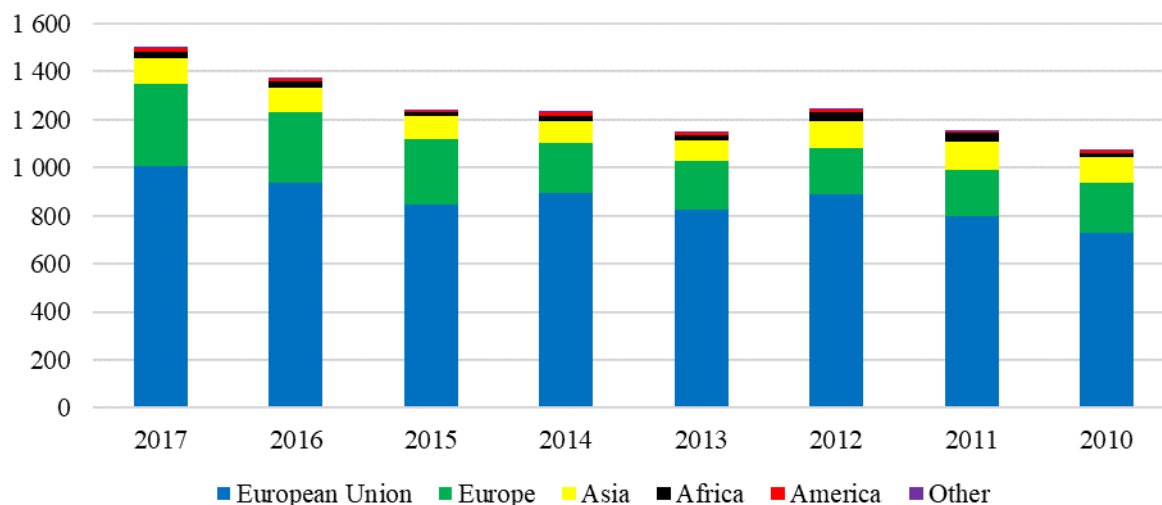
Source: (Ministry of interior of the Slovak republic, 2018)

As Slovakia is a member of the European Union and belongs to the Schengen area, most visitors from Slovakia come from the other European Union member states. From the point of view of the crimes committed by foreigners on the territory of Slovakia, the citizens of the Member States of the European Union are the first. They are followed by citizens of countries located in Europe, which are not members of the European Union. From the point of view of foreigners committing crimes in Slovakia, after the citizens of Europe follows citizens from countries of Asia, Africa, North and South America and citizens of other states. Figures 4 – 8 show the development of the number of crimes committed by foreigners coming from European Union, European, Asian, African, and North and South America top 10 countries.

Figure 4: Development of recorded crimes committed by foreigners from European Union members in Slovakia
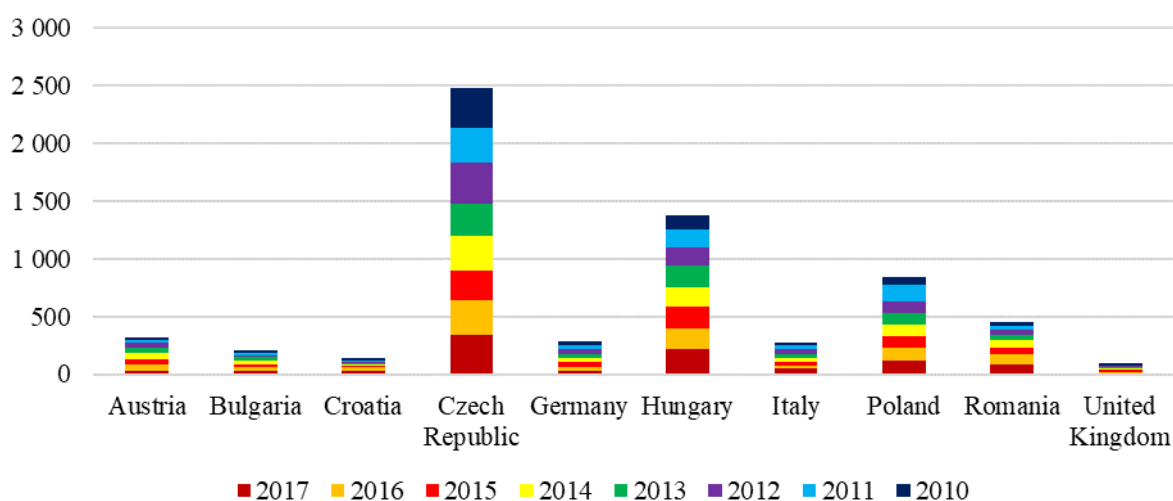
Source: (Ministry of interior of the Slovak republic, 2018)

From the members of the European Union, most of the crimes committed on the territory of Slovakia are committed by citizens of the Czech Republic followed by the citizens of Hungary, Poland and Romania.

Figure 5: Development of recorded crimes committed by foreigners from European states in Slovakia
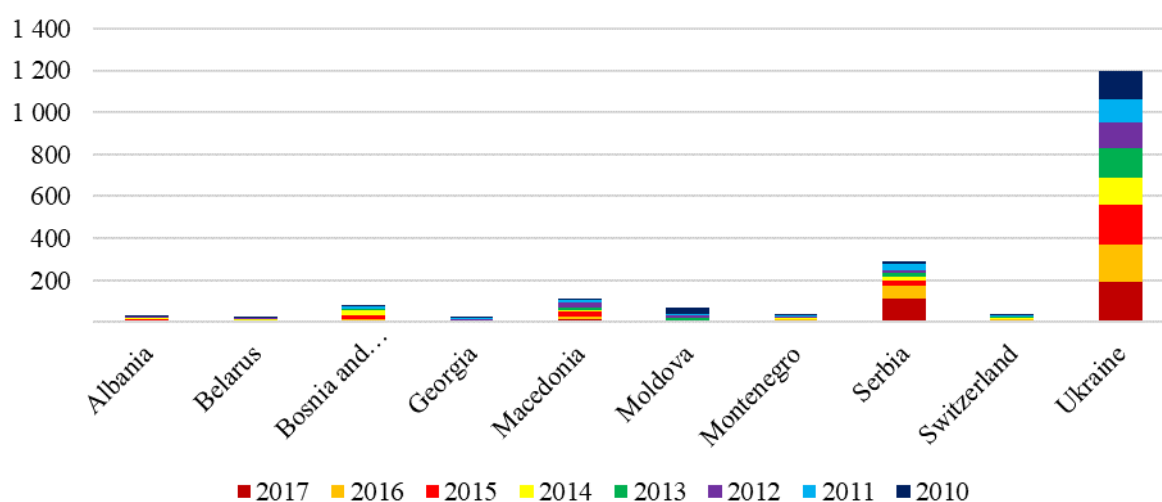
Source: (Ministry of interior of the Slovak republic, 2018)

From the point of view of countries located in Europe, which are not member of the European Union, the most crimes committed on the territory of Slovakia were committed by citizens of Ukraine. Important in this case is the large number of crimes committed by the Serbs. In addition to Serbs, Macedonian inhabitants also commit a lot of crimes on the territory of Slovakia

Figure 6: Development of recorded crimes committed by foreigners from Asian states in Slovakia
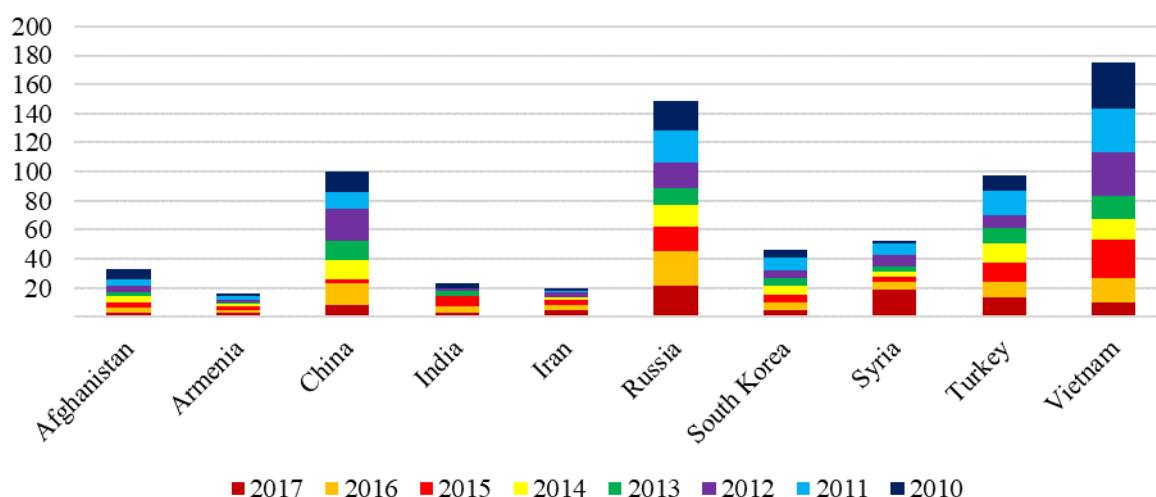
Source: (Ministry of interior of the Slovak republic, 2018)

From Asian countries, the majority of crimes committed on the territory of Slovakia are perpetrated by citizens of Vietnam, Russia, China and Turkey. The number of crimes committed by foreigners from these countries is every year in the range of dozens.

Figure 7: Development of recorded crimes committed by foreigners from African states in Slovakia
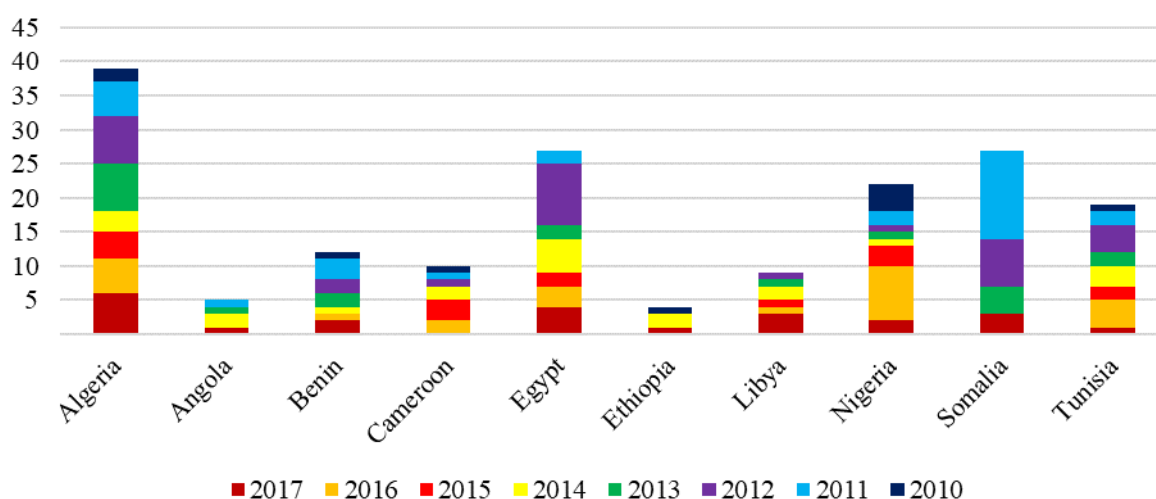
Source: (Ministry of interior of the Slovak republic, 2018)

The most crimes from African countries in Slovakia are committed by the citizens of Algeria, Somalia, Egypt, Nigeria and Tunisia. The number of such offenses is less than ten per year.

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Figure 8: Development of recorded crimes committed by foreigners from North and South American counties in Slovakia
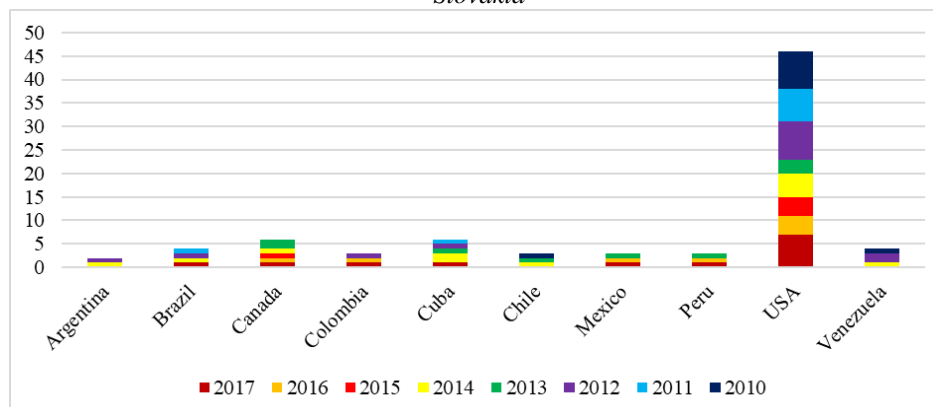
Source: (Ministry of interior of the Slovak republic, 2018)

From the point of view of crimes committed by foreigners in Slovakia, North and South America is similar to Africa. Citizens of states located on North and South America rouge less than 10 crimes in Slovakia. Most are caused by USA citizens.

5. Conclusion

The security situation it is possible to express by examining the crimes committed by foreigners in Slovakia. The most crimes in Slovakia are committed by foreigners of the European Union and Ukraine. A large number of crimes are also committed by Serbia, Vietnam, Macedonia, Russia, China or Turkey citizens. Visitors from these countries come to Slovakia mainly because of job opportunities. Illegal migration from Africa and Asia does not aggravate the security situation in Slovakia. Greater security risk comes from foreigners coming to Slovakia because of work reasons. For this reason, it is essential for the State to organize law courses and trainings in crime prevention for these foreigners. In the case of committing crime by these foreigners, the State should have the right to expel these foreigners back to their home country.

Acknowledgment

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GLOBAL BUSINESS IN CANNED FOOD MARKET

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Abstract. The food market is an important market for the globalisation of economies. Hamé, the largest Czech producer of packaged food, has a dominant position in this segment of the market. The Norwegian Orkla Group took over this food producer from Kunovice in 2016 for over 175 million euros, and thanks to this acquisition, Orkla has doubled its turnover in Central Europe. Prior to that, Orkla owned Vitana and, together with Hamé, it became a major supplier of food products for the Czech and Slovak markets. In the Czech Republic and in Slovakia, Hamé has a leading position in the production of pâté, ready-made meals, canned vegetables, jams and baby food. There is large demand for Hamé pâtés also in Hungary, Romania and Russia. The company has 2,400 employees and 10 production plants, of which seven are in the Czech Republic, one is in Slovakia, one in Romania and one in Russia. The company has recently announced its penetration into Central Africa, namely Nigeria and Angola, where it is sending its first food supplies worth hundreds of thousands of crowns. The Administration of State Material Reserves of the Czech Republic will also pay Hamé 15 million crowns for a three-year contract for 120 tons of canned ham and pork products and their protection and replacement. The aim of this paper is to both describe Hamé's position in the globalised packaged food market and to characterise the development of the basic economic indicators of the company in recent years.

Keywords: canned food, company, food market, global business, Hamé

JEL Classification: F23, L25, F61

1. Introduction

The food market is an important market for the globalisation of economies. Czech agrarian exports are dominated by low processed and semi-processed aggregations having a low unit value (Smutka et al., 2017). The development and retention of possible profitable customer relationships are crucial factors for the economics performance of today European agriculture (Macak et al., 2017).

Hamé, the largest Czech producer of packaged food, has a dominant position in this segment of the market. The Norwegian Orkla Group bought this food producer from

Kunovice in 2016 for over 175 million euros (CZK 4.7 billion), and thanks to this acquisition, Orkla has doubled its turnover in Central Europe. Prior to that, Orkla owned Vitana and, together with Hamé, it became a major supplier of food products for the Czech and Slovak markets (CNA, 2016). The local production of agricultural products has also experienced a revival (Dengov et al., 2016).

Orkla is a supplier of consumer goods and solutions in the grocery, pharmacy and bakery sectors in Scandinavia, Central Europe and India. In 2016, the Office for the Protection of Competition of the Czech Republic approved Orkla's acquisition of the food company Hamé. The acquisition was also approved by the Slovak Anti-Monopoly Office. Companies and firms are no longer operating only in their domestic markets, but they are considered as international corporations with customers in all parts of the world (Ubreziova et al., 2015).

In the Czech Republic and in Slovakia, Hamé has a leading position in the production of pâté, ready-made meals, canned vegetables, jams and baby food. There is large demand for Hamé pâtés also in Hungary, Romania and Russia. The company has 2,400 employees and ten production plants, of which seven are in the Czech Republic, one is in Slovakia, one in Romania and one in Russia (Hame, 2018).

The aim of this paper is to both describe Hamé's position in the globalised packaged food market and to characterise the development of the basic economic indicators of the company in recent years.

2. Material and Methods

2.1 Methodology

The main method used in this paper is description, in particular characterizing the company in terms of its products. The method of economic and mathematic modelling was also used to express the company's share in the ready-made meals market. In section 2.2 the oligopoly model with a dominant company on the relevant market is used.

Comparative analysis is used to describe the development of the company's performance indicators (particularly the values of production and profit) in recent years. Finally, the knowledge synthesis method is used for the final evaluation of the company's management and to express the prospects for the further development of the company on the relevant market of packaged foods. This means, in particular, the evaluation of the prospects for the company's further expansion on the Asian and African markets and the likely changes to the structure of the company's production in the coming years.

2.2 Model of oligopoly with a dominant firm in the packaged foods market

The situation where there is a strong firm and several smaller competitors in a given market is not uncommon in economic practice. The oligopolistic structure with a dominant firm occurs where it is advantageous for a strong firm to leave a portion of the market to their weaker competitors. "In the equilibrium model of an oligopoly with a dominant company, the competition is such that one company dominates the majority of the market and is surrounded by weaker producers" (Svoboda & Severova, 2017). It is typical for these weaker companies to follow the behaviour of the dominant firm; in particular, they adopt its prices and

demonstrate a number of other elements of perfectly competitive behaviour. Therefore, these firms operating besides the dominant firm are called the perfect competitive fringe. The dominant firm in the oligopolistic market acts as a monopoly in the remainder of the market. The theoretical model of oligopoly with a dominant firm – Figure 1.

Figure 1: Theoretical model of oligopoly with a dominant firm
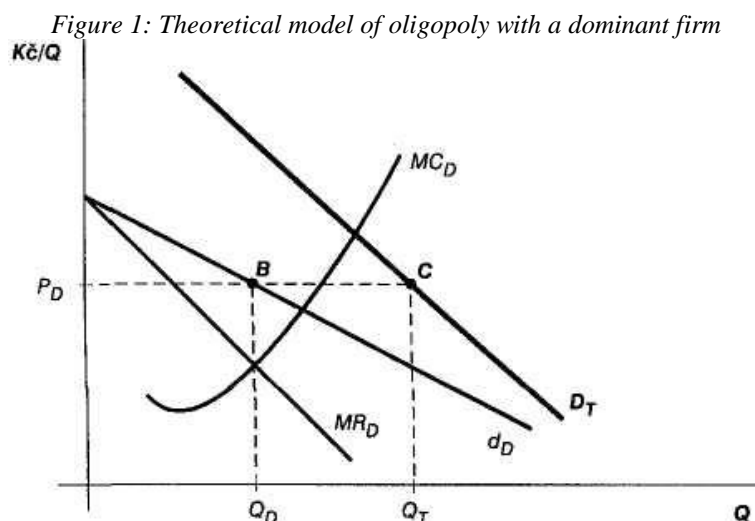
Source: (Macakova, 2003)

The market demand curve is marked D_T, and the demand for the products of the dominant company is shown as the curve d_D. The optimum volume of production is determined by the dominant company from the equilibrium of the marginal revenue and the marginal cost ($MR_D = MC_D$) – the golden rule of profit maximization. The price is set by the dominant company by relating the optimum output (Q_D) to the demand for their product (d_D). The dominant position of the company is reflected primarily in its relatively independent determining of the quantity produced (Q_D) and the price (P_D). The figure shows that if, at the price P_D, the market is not fully saturated, the quantity of production BC, or $Q_D Q_T$, will be realized by the companies from the competitive fringe. The perfectly competitive nature of companies in the competitive fringe confirms that they adopt to the price P_D and perceive it as an external variant, to which they adjust their behaviour (Macakova, 2003).

It is mostly because they cannot realize the same economies of scale due to their size, and because their cost conditions are worse than those of the dominant company. If they set a higher price than the dominant company, they would lose customers. They cannot afford to attract more customers by lowering their price due to the cost conditions mentioned (Severova et al., 2011). Price of agricultural production is determined to a big extent by trading with agricultural crops on the main world commodity stock markets, and it can also be influenced by speculations (Severová & Svoboda, 2011). A considerable attention of the media and both expert and laic public is at present given to raising the prices of food and agricultural products (Severova & Bendl, 2013).

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3. Results and discussion

3.1 Development of Hamé's performance indicators in recent years

The YOY increase in Hamé's sales was over 8% in 2015, reaching 6.01 billion CZK, despite the persistent problems on the Russian and Ukrainian markets. Turnover increased most in the Czech Republic, by 13%. The domestic market brought Hamé half of their sales. The company's gross profit was approximately CZK 600 million. This increase is confirmed by figures from the first half of 2015, according to which the company's total sales increased by 14%, to 2.89 billion Czech korunas (Hame, 2018).

In the first half of 2015, one of the largest domestic producers of foods, Hamé, recorded a decline in sales in Russia of 9%, and in Ukraine of as much as 90%, the reasons being the sanctions and retaliatory measures taken by the EU and Russia and the civil war in eastern Ukraine, which affects the purchasing power of the whole country (Hame, 2018). Although both markets are still considered promising, the company has started to look for new outlets. Only outlets at good locations with good-quality range of products will survive in the future (Svoboda & Severova, 2015).

While in previous years the increase was sustained by growing exports, in 2015 sales rose mostly in the Czech Republic, by 13% to be precise. The decline on the markets of the countries of the former Soviet Union was partly compensated by the increase in sales of 13% in Slovakia, where Hamé bought the mayonnaise producer, Doma Prešov. In Romania, after the acquisition of the La Grande Famiglia brand, sales grew by 61% (Kutner, 2015).

Figure 2: Hamé's sales between 2014 and 2017 (in billion CZK)
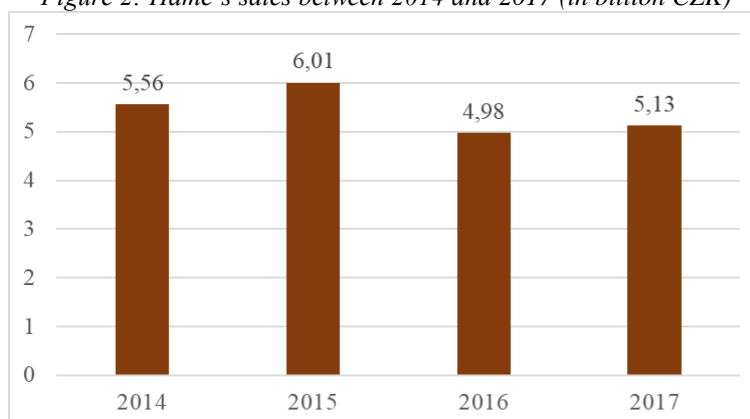
Source: (Hame, 2018)

The Czech food company Hamé earned 5.13 billion Czech korunas in 2017, which represents a YOY increase of three percent. Exports accounted for 44 percent of sales. Hamé recorded the greatest increase in demand (14%) in Ukraine. However, the country had only a one percent share of the company's total sales. As the company's supplies to Ukraine had dropped almost to zero, sales there were growing from very low figures. Hamé's sales also grew in its traditionally largest outlets, among which are the Czech Republic and Slovakia with more than four percent growth. Sales on the Hungarian market grew by 5% and on the Russian market by 2.5% (Pankova, 2018).

Figure 3: Share of Hamé's sales of individual countries in 2017 (in %)
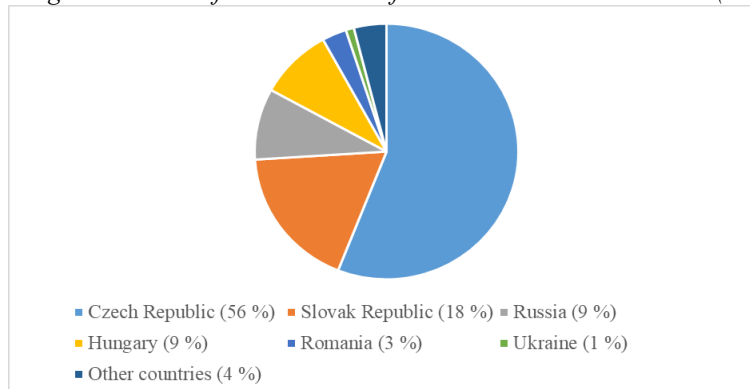
Source: (Hame, 2018)

The company intends to strengthen their export policy further. The aim of this decision is to spread the focus of the business more evenly. The company has announced market penetration in central Africa, namely Nigeria and Angola, where they have already sent food supplies worth hundreds of thousands of korunas.

3.2 New markets for exports of Hamé's products

3.2.1 Hamé packaged foods entering internet shops in China

The largest domestic producer of packaged foods, Hamé, began selling their products in Chinese e-shops in 2016. Jams, ketchups and above all baby food are newly available from Tmall, TaoBao and Juhuasuan internet shops, which fall under the Alibaba group. This is frequently referred to as the largest on-line marketplace in the world. Market organizers wish to meet the needs of both consumers and vendors by ensuring customer satisfaction while maintaining profitability for vendors (Pilar et al., 2018).

In 2016, Hamé supplied only a few brick and mortar shops in five Chinese provinces. With their entrance online, entirely new possibilities opened up for the company. As the Hamé's CEO, Martin Štrupl, said: "…these e-shops operate across China, which means that, theoretically, over 500 million Chinese people with internet access can order food online. (Hame, 2018)"

Serious food safety incidents with tainted meat, contaminated bottled water, and infant formula containing dangerous melamine, are seen as the cause of the popularity of online food shopping among the Chinese. For many consumers in China, online shopping seems to be a safer alternative, as it makes it easy to check the ingredients and the producer. Moreover, the advantage of European producers such as Hamé is that their products are generally considered by the Chinese to be of much better quality than their domestic products (Broz, 2016).

As Joanne Denney-Finch of IGD says: "Food is seen an affordable luxury and foreign brands are popular among Chinese consumers, who are concerned about the food and drink from local sources" (IGD, 2016). Increasingly, agricultural companies as well as retail chains become more socially and environmentally responsible (Severova & Svoboda, 2017).

3.2.2 Entering new markets in central Africa and Vietnam

Hamé has progressed greatly in its efforts to export to new markets in central Africa. In Benin, Ghana and Nigeria, the first deals with local distributors were already negotiated in 2015, and Hamé awaited only the resolution of some official formalities to start exporting baby food. 2015 was also the year when the company managed to export their products to Vietnam for the first time (Kutner, 2015).

3.2.3 Major markets for Hamé products and the outlook for their development

In 2015, half of the six billion sales of Hamé (which was acquired by Orkla of Norway) were already generated abroad. The company's most important markets are in Slovakia, Russia and Hungary. So far, the Chinese market has represented only a marginal share in Hamé's sales. However, over a billion potential customers make the Asian superpower an attractive target. In terms of Hamé's total sales, China's share is very small, but it is anticipated that it will increase significantly.

4. Evaluation of analysis, practical recommendations and research limits

4.1 Evaluation of analysis

Without a doubt there is a strong, dominant firm – Hamé - on the Czech market for packaged foods. It is part of the transnational Orkla group, with predominantly Norwegian capital. At the same time, this integration of Hamé is a result of the globalization of the packaged foods market. Its integration in a transnational cluster allows it to achieve returns to scale with a steady growth of key indicators of economic performance (in particular sales), despite structural changes in product exports mainly due to regional conflicts and international sanctions.

A significant factor contributing to growth is the quality of Hamé products. It allows the company to expand onto new markets (e.g. Asia and Africa), thus stabilizing the company's economic results and providing new job opportunities.

4.2 Recommendations for Hamé

- The main recommendation for Hamé, resulting from the conducted analysis of the relevant market in packaged foods, is to expand export opportunities, especially to the wealthier economies of Asia and Africa.
- It is necessary to maintain the Czech share of the global sales of Hamé's products at more than a half, due to the tradition and the popularity of Hamé's products amongst the Czech population. However, that is possible only if the current quality of the company's products is maintained in the future. The option of increasing the company's exports is undoubtedly affected by the rapid appreciation of the Czech currency, which, to a certain extent, makes Czech products more expensive abroad.
- It is also important for Hamé to keep qualified staff in the company, which is not easy considering the generally low unemployment rate and wage growth in competing companies in the region. However, wage growth is necessary, as within the EU the Czech Republic is still among those countries with a cheap labour force.

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4.3   Research limitations

The analysis of Hamé's economic performance on the globalized market in packaged foods was based in particular on publicly-available sources. Given the scope of this paper, it is not possible to express the extent of the influence of multinational, or rather transnational, oligopolies on the relevant global packaged foods market.

5.   Conclusion

The food company Hamé has been successful in the long term on the globalized packaged foods market. Half of the several billion sales of Hamé, which was acquired by Orkla of Norway, are already generated abroad. The company's most important markets are in Slovakia, Russia and Hungary. Currently, Chinese markets represent only a marginal share in Hamé's sales. However, over a billion potential customers make the Asian superpower an attractive target. One of the significant factors contributing to growth is the quality of Hamé products. It allows the company to expand onto new markets, thus stabilizing the company's economic results and providing new job opportunities. After a number of unsuccessful attempts, the Administration of State Material Reserves bought 120 tonnes of tinned meat for CZK 15 million in 2016. The administration began to put food supplies out to tender about five years ago, with the aim of increasing food supplies in the Czech Republic for emergencies.

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GLOBALIZATION AND ITS IMPACT ON DIVERGENCE IN THE EU WITH REGARD TO THE DIRECTION TOWARDS TRADE WARS

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Abstract. The founders of the European Union assumed that deeper integration of the Member States would lead to greater real convergence between these countries. Already the development before the financial and economic crisis had shown slower economic and social convergence than expected. The financial and economic crisis has accelerated the process of divergence between EU member states, and this trend persists even today. One factor contributing to this process is the direction to the trade wars. We can conclude that, despite the visible improvement in a number of macroeconomic indicators, the differences between EU member states persist. The main objective of this paper is to verify the hypothesis that the process of divergence "conditioned" by trade wars tends to lead to the fragmentation of the EU integration group with a negative impact on socio-economic development. The partial objective of this paper will examine the causes of the tough customs policies of the EU integration group and other world economic players, while their emergence is an immediate reaction to the trade balance deficit. Enforcing tough customs policies is a return to protectionism as well as the prioritization of bilateral agreements before multilateral agreements. The development of selected indicators and their divergence will be examined by using the neoclassical concept of conditioned beta and sigma convergence.

Keywords: globalization, divergence, trade wars, customs policy

JEL Classification: F13, F14, F15

1. Introduction

Since 2014 when the current European Commission has taken up the leadership, political activity concentrates on deepening the economic and monetary union (EMU), i.e. on closer coordination of economic policies. Completing and full exploitation of the single market for goods and services, digital, energy and capital markets should form part of significant strengthening towards the economic union as well as to creation of more jobs and greater economic growth. Five President´s Report, pursuing progress in the areas of *economic union* – focusing on convergence; *financial union* – completing the banking union; *fiscal union* – ensuring sound and integrated fiscal policies and *democratic accountability* – reviewing the political construct of the EMU, have indicated the ambitions in this direction. (Juncker, 2015).

We know from history that the best time to pursue deeper reforms is the period following the economic crisis, which has revealed deficiencies of the existing institutional framework and its functioning. From this perspective, we are experiencing the times when the greater and more sustainable economic and social convergence and deeper integration between EU member states should be the one the main goals of reforms and new institutional architecture. The need for greater convergence have to be discussed also in the view of significant regional disparities that have been observed since the beginning of 21st century.

The concept of convergence is used in the theory of economic growth and it particularly applies to the issues related to the development of income levels and analysis whether regional and/or national differences persist. The most commonly used concept for measuring convergence is β(beta)-convergence which examines the catching-up of the income levels per capita and σ(sigma)-convergence which reflects the reduction of the dispersion of income per capita.

International economic integration represents an objective process that emerges from the very logic of development of productive forces and development needs of the international division of labour. (Síbl, 2006). This process is accelerating due to scientific and technological revolution (progress). It should be added, however, that globalization is now playing a decisive role in the process of international economic integration, while integration itself has a globalization content.

Some authors understand globalization (in economic sense) as an integration of economies of different countries into a global system (at least into its main economic part of the world) which operates under rules set up generally. (Zitkiene & Zitkus, 2012). One can but agree with authors´ claim that it is crossing (decreasing of importance) the borders of national states in order to interconnect reproduction processes and to create single national economic complexes.

Both globalization and integration have liberalistic nature. Consequently, competition is also being globalized. Stankiewicz (2005) ranks competition among principal changes of globalization too, together with the change in the role of the state, creation of a new global economy and market expansion. (Stankiewicz, 2005). Protectionism should be a marginal issue today. Despite the objective facts of globalization, we face an intensified competition, especially among large players in foreign trade in the form of reciprocal tariff increases.

This process results in reciprocal reaction of foreign partners concerned, which increase custom duties on selected commodities, imported from the country concerned. This is the beginning of a trade war known from history.[15]

Recently, the trade wars the USA – China and the USA – the EU are on the move. The main argument on the part of the USA is passive trade balance with both trade partners. Deficit with China is 375 billion USD. Deficit with the EU is 101 billion USD. The USA intend to raise custom duties for cars imported from the EU by 20%, which would reduce car

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[15] Over the last century, only the USA led six trade wars: in 1930 during the Great Depression; in 1963 with Europe (the Chicken War); in 1981 with Japan concerning the export of cars from Japan; in 1982 with Canada on wood; in 1985 with Europe on citrus fruits and pasta; in 1993 with Europe on bananas from Latin America where the owners of plantations were mostly Americans.

imports to the USA by almost half. For China, the USA plan to raise the import of American cars (OECD, 2018).

The article aims to verify the slow process of convergence before, during and after financial and economic crisis of 2008 and to confirm the impact of trade wars on deepening divergent tendencies. In this article, we are going to verify the following hypotheses: 1. development before financial and economic crisis has shown slower economic and social convergence; 2. financial and economic crisis has affected the deepening of divergence tendencies, which persist to this day; 3. trade wars represent one of the factors with negative impact on convergence in the EU.

2. Literature review

There are a number of theories explaining the convergence process differently. Solow (1956) examined the link between the economic growth and convergence already in the 1950s and in his research accepted all assumptions of Harrod-Donnar model of long-term economic growth except for assumptions of fixed proportions. Instead, he assumed that the only mixed commodity is produced by labour and capital under standard neoclassical conditions (Solow, 1956). Baumol (1986) introduced concept of convergence clubs to examine whether relatively homogenous regions (region with the same or similar initial conditions) converge to similar stable value within the group but which differ among the groups. He argued that homogenous groups of countries converge and heterogeneously diverge (Baumol, 1986).

Expansion of convergence research occurred in 1990s after publishing the articles of Barro and Sala-i-Martin (1990, 1991, 1992); Mankiw et al. (1992), which were based on neoclassical theory of growth and extended previous convergence research by regional aspect. Such expansion can be partially explained by growing dissatisfaction in 1980s based on slower than expected reduction of regional disparities (Armstrong, 2002). According to Barro and Sala-i-Martin, if all regions approach the same level of equilibrium, the β-convergence is indicated (Barro & Sala-i-Martin, 1992). They found that convergence process in European countries is similar to the process in the USA and reaches approximately 2 % per year. (Barro & Sala-i-Martin, 1991). Mankiw et al. (1992) found that the β-convergence rate was around 2-3 % in the USA (Mankiw et al., 1992). In a recent contribution, Crespo-Cuaresma et al. (2008) point to the fact that being a EU member state increases integration and has positive and lasting effects on economic convergence (Crespo-Cuaresma et al., 2008). Similar results are found by De Grauwe and Schnabl (2008), who obtain that fixing the exchange rate and adopting the euro would enhance economic growth in South-Eastern and Central European economies (De Grauwe & Schnabl, 2008).

Various authors have criticized this neoclassical approach of measuring convergence for the following reasons. Firstly, alternative models do not test it (Magrini, 1999). Secondly, the mobility factor and other uncontrolled variables may affect detected β-convergence (Fingleton, 1999). Finally, small absolute convergence is indicated because the regions have very different initial conditions.

The founders (main builders) of the Western European integration, despite economic, political and post-war reality, adhered to their right vision - a united Europe and the establishment of economic relations between countries based on the integration. *"Monet, as an individualist, believed in the unification of Europe, and creation of the European Coal and*

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Steel Community was considered to be the first step on the road to complete European unification" (Síbl, 2006). However, they could not foresee all aspects of contradictory and inconsistent building of integration relationships (not only economic). Likewise, theoreticians of the international economic integration (Viner, Balassa) cannot address the issues of contradiction arising from the impact of globalization processes on development of integration with regard to crossing, reduction or removing of boundaries between the countries and promotion of national economic interests in foreign trade.

3. Methodology

3.1 β-convergence hypotheses

The most commonly used convergence concepts in literature are: β-convergence and σ-convergence developed by Barro and Sala-i-Martin (1990, 1991, 1992). β-convergence occurs when poorer country grows faster than richer, i.e. poorer country catches the richer at the level of income or product per capita (GDP per capita). Some authors use to analyse β-convergence GDP per capita, others income per capita. Abreu, de Groot and Florax (2005) examined whether the use of one or the other variable leads to different convergence rates and confirmed no significant differences. (Abreu et al., 2005). It expresses the negative relationship between the initial level of GDP per capita and its average growth rate. We distinguish two types of β-convergence: *absolute (unconditional) convergence* and *conditional convergence.*

Absolute ß-convergence occurs when all regions converge to the same steady state, e.g. on long-term base they reach the same GDP per capita. A uniform steady state requires some factors be the same for all regions in the sample. Differences between regions in a number of factors (at the level of technology, savings, economic structures, education, government policies and preferences) suggest that economies will have different steady states. Therefore, the most studies pass from research of absolute convergence to conditional. *Conditional ß-convergence* occurs when regions converge to their own steady state due to differences in structural factors or conditions. When examining conditional convergence, these so-called conditional variables in the model must be taken into account.

Barro and Sala-i-Martin (1990, 1991, 1992) have explored convergence on the basis of standard model of neoclassical theory of growth of the closed economy and derived the following relationship:

$$\frac{1}{T}\log\left(\frac{Y_{i,t_0+T}}{Y_{i,t_0}}\right) = \alpha - \left(1 - e^{-\beta T}\right)\frac{\log(Y_{i,t_0})}{T} + u_{i,t} \qquad (1)$$

where:
β – convergence speed;
α – level constant;
Y_{i,t_0+T} – real GDP per capita in i-th region in the year t_0+T;
Y_{i,t_0} – real GDP per capita in i-th region in the year t_0;
T – length of period researched;
$u_{i,t}$ – random component.

In equation (1) we consider coefficient α to be a constant, i.e. value of the steady state y^* (f.e. GDP per capita) is the same for all economies that are included in the model. However, we do not know value of the steady state, so the constant α is defined. Parameter β, which can be derived from the slope of the regression function, actually represents the degree to which the regions are approaching the steady state. The condition of β-convergence is the positive expression $(1 - e^{-\beta T})$, i.e. $\beta > 0$. Convergence occurs when $\beta > 0$. If the dependence in this regression is significantly negative, the process of absolute convergence is proven. If for different economies there is variable term α and various steady states y^*, then we are talking about conditional β-convergence. The model further assumes that the random component has a zero mean value, it is independent of $logY_{i,t0}$ and there is no autocorrelation in the model.

3.2 σ-convergence hypotheses

Although slightly different, a part of the literature devoted to the distributional dynamics of per capita income levels and examining the dispersion of per capita income among regions and its development over time is closely related to β-convergence. We are talking about the concept of σ-convergence, which is another of the concepts of Barro and Sala-i-Martin (1990, 1991, 1992). σ-convergence occurs when dispersion of per capita income decreases over time. Due to the interconnection of β-convergence and σ-convergence, the positive β-convergence parameter does not necessarily mean a decrease in σ-convergence. β-convergence is a necessary but not sufficient condition for σ-convergence. For the analysis of σ-convergence, we used a modified relationship in the form:

$$\sigma_{y_i} = \sqrt{\frac{\sum_{i=1}^{n}\left(\log y_{it} - \overline{\log y_i}\right)^2}{n-1}} \tag{2}$$

where:
n – number of regions;
$y_{i,t}$ - real GDP per capita in i-ith region in the year t.

3.3 Input data

Our analysis is based on the statistical data of the current 28 EU Member States for the time period 2003 to 2017 divided into three five-year periods. Selected period is associated with an ambition to examine the situation before, during and after the financial and economic crisis. We come from a simple panel estimate quantifying the effect of the original GDP per capita at the beginning of the selected period (or a year before the beginning of the period) on the average GDP growth per capita in the relevant selected period. Subsequently we test the impact of selected support factors that may affect convergence. We take into account the impact of all freely accessible indicators, which are available over a long period[16], and predicate of the economic development and stability of the country. Statistical data for the purpose of verification of convergence were obtained from the Eurostat, World Bank and UNCTADstat database.

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[16] As a result of the unavailability of statistical data, the reference period is 2006-2017

4. Results and discussion

Our calculations based on panel estimates confirm the presence of absolute β-convergence in the EU. Less developed countries (countries with a lower level of GDP per capita) have grown faster than richer EU countries since 2003, resp. richer countries grew more slowly, as the coefficient β of the pertinent GDP per capita indicator gets negative value. This finding applies irrespective of the expected length of the economic cycle. As shown in Table 1, the results obtained through generalized method of Ordinary Least Squares (OLS), taking into account factors specific to each country (i.e. method of fixed effects) show that the catching-up took place at rate from 0.5 to 2.1%. The model shows that convergence between EU member states was significant before the financial and economic crisis, thereby reversing hypothesis n. 1. During the financial and economic crisis, we have recorded diverging tendencies, and these tendencies persist to present day.

Table 1: Absolute β-convergence in the EU

	before crisis	during crisis	after crisis	2003 - 2017
GDP per capita	-0,0209***	-0,0049*	-0,0096**	-0,0141***
Constant	0,237***	0,041	0,116**	0,154
Number of observations	140	140	140	420
Coefficient of determination	0,555	0,053	0,161	0,556
Number of countries	28	28	28	28

***p<0,01, **p<0,05, *p<0,1, logarithm of GDP per capita in EUR

Source: (*own calculations)*

Catching up process was influenced by various internal and external factors. Some factors slowed down economic growth, while others supported it. Therefore, in the next step we tested the effect of possible explanatory factors. We focused on testing the impact of macroeconomic stability and development factors, including trade wars, investment rates, government consumption, openness of the economy, inflation rate.

Table 2: Conditional β-convergence in the EU - impact of selected factors of macroeconomic stability and development

Explanatory variable	**β**	**λ**	**R^2**
Trade wars[17]	-0,0863***	-0,4113***	0,611
Investment rates	-0,0113***	0,0022*	0,429
Government consumption	-0,0083***	-0,0225***	0,597
Openness of the economy	-0,0118***	0,011*	0,413
Inflation rate	-0,0115***	-0,0079	0,394

***p<0,01, **p<0,05, *p<0,1

Source: own calculations

Our estimates show (the column labelled λ), that investment growth, greater openness to the economy positively influence the convergence process in the EU. On the other hand, trade wars, an increase in government consumption and high inflation rates have a negative impact on the convergence process.

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[17] We examined only the impact of trade war between the EU and the USA

The results of real β-convergence show that the economies converge or diverge from steady state in time. It serves us little when we try to measure the convergence process in particular years. To analyse this, a sigma convergence approach is much more suitable.

Figure 1: Real GDP per capita in EU
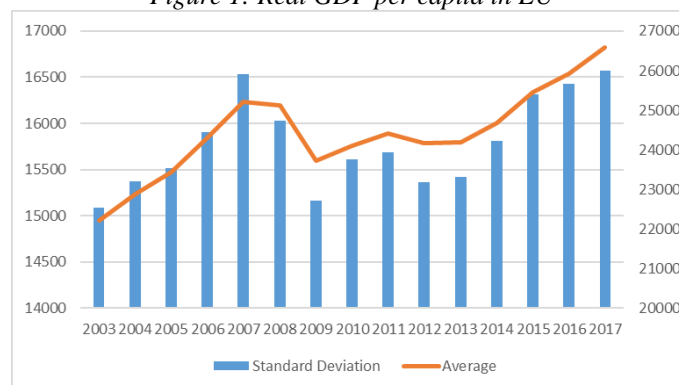
Source: (own calculations)

Figure 1 shows the evolution of the simple average of real GDP per capita in the EU and its standard deviation for each year. The figure shows an increase of the variance in 2008 - 2009 when economies has been hit by the recession. A similar increase occurred in 2011 - 2013, which reflects an increase in regional disparities in the post-crisis economic development.

5. Conclusion

The aim of the paper was to verify the slow process of convergence in the EU before, during and after the financial and economic crisis of 2008 and to confirm the impact of trade wars on deepening divergent tendencies. Application of the concept of β-convergence and σ-convergence has confirmed the hypothesis that the financial and economic crisis has contributed to deepen divergent tendencies. Upon application of conditional β-convergence, we have concluded that investments, greater openness to the economy have positive effects on convergence in the EU. On the other hand, an increase in government consumption and high inflation rates has a negative impact on the convergence process. The sigma convergence concept offers following conclusions. Crisis period has definitely negative impact on EU which suffered from economic downturn in 2007-2009 and their GDP per capita standard deviations have increased.

One of the partial objectives was to explore further the impact of trade wars on convergence in the EU. Trade wars that took place in history and especially current ones are considered non-systemic, bearing the seal of protectionism and failing to cope competition in terms of creation of the global economy. Degree of their impact on economies depends on their extent, commodities (whether they are consumer goods or semi-finished products intended for further production) concerned and the importance of these commodities in foreign trade as well as in the structure of economies and at the same time in the share of GDP.

Does unleashing the trade wars have an impact on convergence in the EU? In principle, it can act to slow the growth of the economy in the context of the share of specific countries in the relevant commodity affected by business partner's increase in tariffs. The current trend

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toward protectionism will have impact on the reduction of trade in goods. Cross-border trade, this time focusing on services rather than goods.

The slowdown in convergence in the EU however, is affected by more significant factors, namely:

1. Imbalance between monetary and fiscal policies.
2. Existence of euro area and countries outside euro area.
3. Different levels of economy within euro area as outside euro area.
4. Low investment rate.
5. Weak labor productivity growth, which creates preconditions for the continuation of further polarization between countries.
6. High indebtedness.

To sum up there are several risks that threaten convergence within the EU, mismanagement of which can lead the Union countries towards disintegration processes, such as Brexit.

Acknowledgment

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E-HEALTH AS A SUPPORTIVE FACTOR OF IMPROVING QUALITY OF LIFE

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Abstract. The goal of globalization, as a process of economic, security and political interconnection of countries and thus as a universal trend of contemporary development is to achieve a more effective approach to human resources. The effectiveness of globalization and its economic boundaries helps to spread information technology. The use of ICT has become an integral part of everyday life and necessity not only of businesses, as well as of citizens and governments. The massive take-up of ICT accelerates the transfer of knowhow in the health sector and the quality of provided services. The ability to manage logistics and procurement of all activities of the healthcare sector appear to be future trends in society. The paper deals with electronization in healthcare system as an important part of building a modern society that makes a significant contribution in improving quality of life and it is perceived as a use of modern, information and communication technologies to meet the needs of patients and health care providers. The contribution refers to the Index of the Digital Economy and the Index of Public Administration Development and it also analyses the current status of selected electronic services in the Slovak Republic, its advantages and disadvantages and subsequent comparison with selected countries. The eHealth improves the approach to health care and leads to higher quality of life of inhabitants. In the paper a survey is carried out among citizens regarding the use and satisfaction with provided electronic services.

Keywords: eGovernment, eHealth, quality of life, index of digital economics

JEL Classification: I15, I31, P46

1. Introduction

Globalization is contributing to international migration and to patients becoming increasingly mobile/ "global", creating new needs for patients afety, access to data and continuity of medical care across national borders. (Essena et al., 2018).

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eHealth can benefit citizens, patients, health and care professionals but also health organisations and public authorities. eHealth – when applied effectively - delivers more personalised 'citizen-centric' healthcare, which is more targeted, effective and efficient and helps reduce errors, as well as the length of hospitalisation. It facilitates socio-economic inclusion and equality, quality of life and patient empowerment. (European Commission, 2012A). Health care is considered as a bundle of mild and severe illness treatments. (Pardo-Garcia et al., 2018)

Healthcare systems in Europe and other parts of the world are facing growing financial demands of the sector caused by ageing of the population. The growth of demands and expectations of citizens of particular countries towards healthcare, or extension of the gap between possibilities of medicine and real available healthcare, personal provision of healthcare, pressure on quality growth of provided services, or assuring mobility of healthcare in range of EU. These challenges cope also Slovak Republic and its healthcare. (Ministry of Health SR, 2008).

Public health expenditure in the EU's 27 Member States rose to 7.2% of GDP in 2010. The projections show that expenditure may continue to grow in future. Due to the ageing population and other socio-economic and cultural factors. The impact of these changes is already being felt today and is particularly acute at a time of increased pressure on public budgets and higher quality of services. (European Commission, 2012B).

One of the suitable approaches to face challenges in system of healthcare is informatization of processes in frame of the whole healthcare. Informatization of processes in frame of the whole healthcare is called *e*Health. *e*Health hides in itself a potential to contribute to quality improvement, cost effectivity, time availability and mobility of health services, which would not be possible without deployment of informational and communication technologies (Ministry of Health SR, 2008).

2. Electronisation of services in context of incresing quality of life

Quality of life is used to assess the general well-being of individuals, people and society. Health is perceived as one of the factors influencing personal well being and so that the quality of human life. (Antalová, 2017) Concepts of individual quality of life rise from the theory of perceived quality of life as a subjective assessment of satisfaction with individual areas of life. (Tokarova et al., 2002; Antalova, 2016)

Criteria for assessment of quality of life of citizens are assessed by various international and national organizations. (Cernakova & Hudec, 2012) They include criteria concerning the economic, political and social environment, the socio-cultural environment, education and healthcare - health status of citizens, level and availability of medical services, etc. (Soltes & Repkova Stofkova, 2016)

Improving the quality of life by creating appropriate conditions for the modernization of health services in order to improve the health of citizens and population is crucial for health care strategic plans and policy. The availability of public administration services and health services and their proximity to citizens can be considered as crucial in the context of increasing quality of life. (Gasova & Repkova Stofkova, 2017)

The Digital Economy and Society Index (DESI) help countries to identify areas requiring investments and in provision of fullfilment of ongoing IT projects, it is also possible to anticipate an increase in interest among citizens in e-services as eHealth. (Daneshjo et al., 2016; Gazdikova, 2017)

It is a composite index that summarises 30 relevant indicators into 5 groups on Europe's digital performance, connectivity - broadband access, digital skills, use of Internet services, Integration of digital technology and digital public services. According to the European Union in 2017, in average less than one in five respondents have used healthcare services provided online (18%). 52% of all respondents would like to have an online access to their medical and health records. Respondents are much more willing to share their health and wellbeing data with doctors and healthcare professionals (65%), than with companies (14%) or with public authorities even if anonymised and for research purposes (21%). E-health services in 2017 were used by 16% of individuals, making Slovakia on 15th place among the countries rated within the DESI index. Among the population, the level of digital skills increases and also the use of Internet reached 78% of citizens in 2017 in Slovak Republic, which are important features for implementation of eHealth. (European Comission, 2017)

3. Analysis of the current state of eHealth in Slovak Republic

Electronic healthcare is a complex system to support healthcare provision through Information and communication technologies (ICT). The eHealth started as a Project of electronic healthcare (eSO1), a national project co-financed from the EU. After almost 10 years of preparation eHealth in Slovakia was launched on January 1, 2018. Currently eHealth is undergoing the start-up phase and the implementation of eHealth is a long-term proces.

According to the European Commission, eHealth consists of the following four interrelated categories: clinical Information Systems, telemedicine and home care, integrated health information networks, secondary use of non-clinical records. (Ondrus et al., 2017; Bohm & Bohmova, 2017, Nowak, 2018) E-Health provides better quality health care as healthcare professionals have detailed and up-to-date information on the patient's health status (current illnesses, examinations, vaccinations, allergies, etc.). The health professionals will save time to investigate information while minimizing the risk of omission of some data by the patient. (Národné centrum zdravotníckych informácií, 2016) E-health includes interaction communication between doctor and patients, patients and health care institutions. In the Slovak republic, the following areas shall be included: - National Health Portal, The electronic health record of the citizen, Electronic Ordering (e-Allocation), e-Prescription, summary of the medicines of the patient (E-medication), Telemedicine, Management of medical information, Unified reference data base, EU Project for Communicating National e-Health Systems. (Ozorovsky , 2016)

The introduction of an eHealth system was put into practice in January 2018 with the following functions: (Národne centrum zdravotníckych informácií 2018).

- **authentication** - allows Patient and and healthcare professionals access to e-Health system via electronic card;
- **eExamination** – provides electronic recording from examination and replaces the paper medical documentation;
- **ePrescription** - which replaces the paper prescription electronically;
- **eHealth book** - making documentation available via electronic ID (EZK) in the National Health Portal.

The National Health Portal of the Slovak Republic provides information on health, diseases, medicines, healthcare, and contact information about the healthcare provider. It serves as a gateway to the electronic health book. The information are placed in National centre of health information. (Národné centrum zdravotníckych informácií, 2016).

An personal identity card with an electronic chip (eID) serves as a identification of a user accessing the eHealth System and an electronic card of a health professional (ePZP). (Národný portál zdravia, 2018). E-ID will completely replace the insurence ID cards in 2021. The health professionals have their electronic healthcare professional cards (EPZP) from October 2017. (Benova, 2016)

In 2018, it is planned to implement other functionalities as eLab functions, eMedication - the patient's medication history, and Patient summary into eHealth. Electronic ordering (eAllocations) enable the electronic allocation of resources between individual health care providers (planning of patient visits, ordering laboratory examinations and vaccinations, etc.) (Národné centrum zdravotníckych informácií, 2016) From the implementation of eHealth in January 1, 2018, the National Centre for Health Information recorded until August 6, 2018 - 22,276,528 ePrescriptions and 5,897,038 eExamination records and 11,446 health professionals plugged-in, as well as 8012 affiliated Health care providers.

3.1 Benefits and barriers to deployment of eHealth

Achieving strategic targets of *e*Health shall contribute to satisfaction of all participants of healthcare provision system. Summary of main assets is mentioned in the following Table 1.

Table 1: Benefits of eHealth

Benefits for the citizen	Higher quality of provided health care • possibility to communicate ellectronically within the health system • reducing duplicities in examinations, improved quality of the health services by availability of patients' health record, reducing diagnostic and therapeutic errors
More effective healthcare	• reduction of administrative costs by elimination of examination duplicities • reduction of secondary costs of healthcare as a result of error reduction in diagnosis, prescription, and treatment
Healthcare providers profit	• reduction of administrative costs • communication with next subjects shall take course in secured electronic form, ICT systems shall be fully interoperable • significantly automated prescriptions.
Benefits for Health insurances	• cost reduction by eliminating duplicities, decreasing errors, administrative operations
Higher quality of healthcare surveillance	• surveillance over healthcare with tools for proactive monitoring

Source: (Ministery of Health, 2008)

The eHealth Network is the main body at EU level to work towards interoperability of cross-border eHealth services. The Network has the task of producing guidelines on eHealth, and on an interoperability framework for cross border eHealth services. (European Commission, 2010) To the major barriers of deployment of eHealth belong lack of awareness of eHealth solutions among patients and healthcare professionals; lack of interoperability between eHealth solutions, inadequate or fragmented legal frameworks including the lack of reimbursement and schemes for eHealth services, high start-up costs involved in setting up

eHealth systems, regional differences in accessing ICT services, limited access in deprived areas. (European Commission, 2010).

4. Survey and results

4.1 Methodology

The objective of this article is to point out the use of e-health services among citizens. 176 respondents were included in the survey. The survey was carried out in April 2018. The aim was to identify the benefits and barriers of the implemented e-health services and to determinate the e-health deficiencies in the system, as well as satisfaction with provided system of e-health. The survey informed about awareness and confidence of e-health services among respondents,

4.2 Results of the survey

Most frequently occured benefit of implementing eHealth services from the point of view of respondents was an increase of safety of the treatment. To the second most frequent advantage belonged sharing eExamination between health professionals. Disposition of complex patient information and existence of more effective and fast examination of ePrescribing and eExamination and by this mean a removal of the paper form of the medical prescriptions and records.

Figure1: Benefits of eHealth according to the respondents in the survey
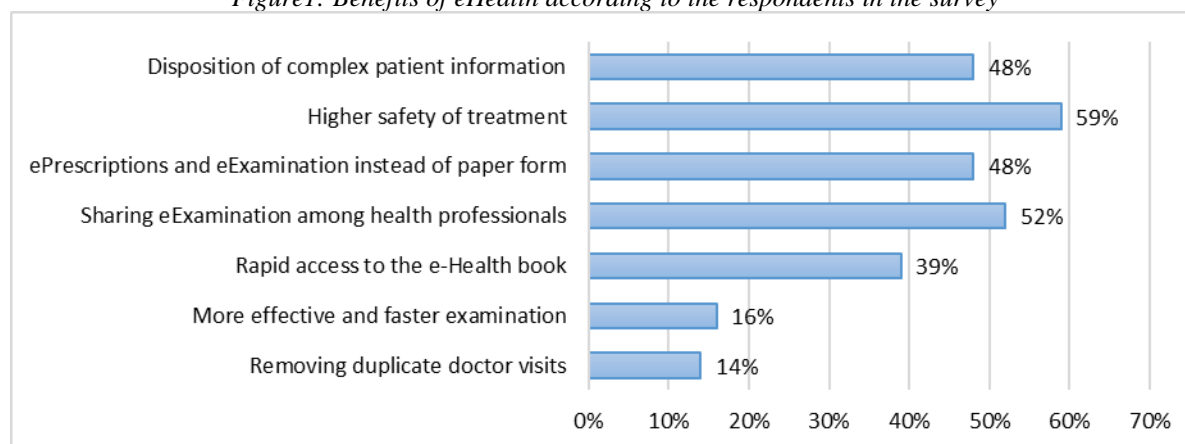
Source: (own processing)

42% of respondents have already been confronted with several e-health services in practice (i.e. ePrescribing etc.), meanwhile 58% did not meet with the eHealth yet, which is displayed in the Fig. 2. The respondents expressed that electronisation would lead to higher quality of provided eHealth services. Only 12% of respondents showed lack of confidence towards improvement of health services due to electronization. Several respondents claimed that the system was too complicated, which could be the reason mainly among older generation with lower digital skills.

Figure 2 and Figure 3: Confrontation with eHealth in practice, Improvement of quality of services due to electronisation from the point of view of respondents
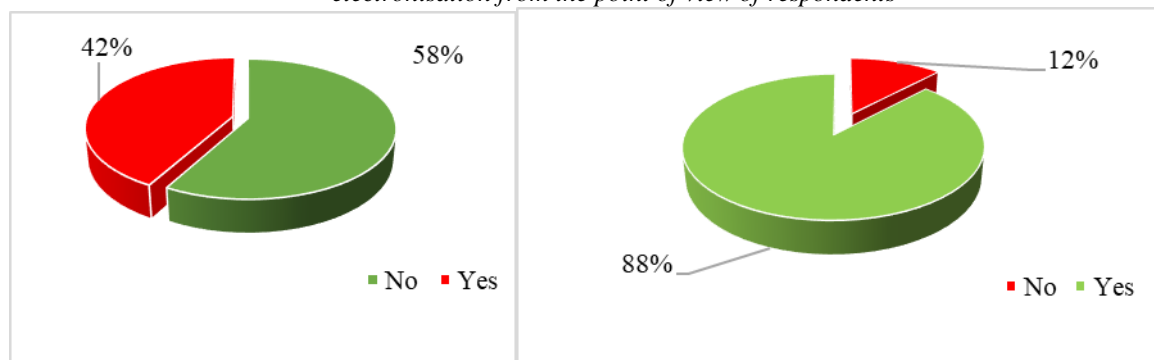
Source: (own processing)

5. Discussion

eHealth lead to remarkable savings in system of healthcare provision, reduce errors, and administrative burden of health professionals, support growth of service availability for citizens, and thus increase the citizen satisfaction (Ministery of Health, 2008)

Healthcare professionals still perceive some negatives of eHealth regarding the information systems through which these electronic health services are provided. The initial obstacles were connected with delay with linking to the system, related to the fact that at the beginning of the system deployment, the computer equipment did not have the required level. To other functionalities that are planned to be implemented in 2018 belong the funcionalities as eLab, eMedication, Patient summary and Telemedicine. Telemedicine makes it possible to manage the healthcare service in new ways. Digitalisation can be also deployed by implementation of common guidelines, for example via apps. These funcionalities are highly developed in northern countries. Innovations in eHealth technologies have the potential to help older adults live independently, maintain their quality of life, and to reduce their health system dependency and health care expenditure. (Sanyal et al. 2018)

6. Conclusion

Electronic healthcare is perceived as the use of modern, information and communication technologies to meet the needs of patients and health care providers. Citizens should receive high-quality patient care from a modern and efficient healthcare system. An important element in achieving this is to involve patients in their own treatment.

A growing and ageing population of citizens require new approaches in implementation of electronic health care system. The aim of eHealth is to improve the efficiency of health care system, to save the time for administrative work and financial resources for both citizens and healthcare providers. The existence of eHealth causes that professionals have actual information about the patients, it enables rapid decision making due to quick access, it enables sharing life-saving information and so that it contributes to improve health of citizens by making information available to other health care professionals.

By implementing eHealth services the patiens can benefit from improved quality of the health care services by reduction of diagnostic and therapeutic errors and reduction of

administrative costs by elimination of examination duplicities. This is also achieved by linking clinical information systems, laboratory testing systems, public health information systems, etc.

In the survey the mostly often noticed benefit perceived by respondents was an increased safety of treatment regarding existence of contraindications and disposition of other information. The majority of respondents declared the benefits of eHealt from the point of views of the respondents - sharing eExamination between health professionals, the existence of more effective ePrescribing, information about potential drug interactions, side effects for health proffesionals, or possible duplication at the background of the system. eExamination and fast eAllocation and elecronic medical prescriptions and records belonged also to the benefits of eHealth from the point of view of respondents and so that to improvement of quality of life.

Acknowledgment

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SUBTERRANEAN ECONOMY IN GLOBALIZATION ERA

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Abstract. Globalization of the world economy is not only about opportunities for economic, social and cultural development of the nations involved in the international division of labour, but it also means finding appropriate answers to problems that tend to become global rather than national. Such a problem is the emergence and development of the "subterranean/underground" economy, which is a real challenge both for national authorities and for international organizations called to find solutions to limit the effects of this phenomenon on national economies and the global economy. The present study attempts to respond to a growing need to understand, conceptualize and rationally justify a reality that cannot be overlooked statistically - the „underground" economy as an inevitable element of a state economy. The magnitude of the phenomenon brings to the present the need to know correctly the activities that make up the „underground" economy and the negative consequences that accompany them. Deciphering the nature of the „underground" economy and the underlying causes that it generates and develops can provide pertinent responses to methods to counteract its negative consequences. The study is in the category of conceptual and methodological research, the subject of research being in the sphere of topics of interest of the author, related to evasion and tax fraud. The methodology used for the article is the hypothetical-deductive, the conclusions resulting from the synthesis, the critical analysis and the original treatment of the results of the researches.

Keywords: "underground" economy, economic development, tax fraud, globalization

JEL Classification: B22, H26, F60

1. Introduction

The globalization is an undeniable reality. The world-wide legal and economic regulations are far from forming a clear and well-defined framework of specific rules in line with the evolution of economic globalization, which is why there are sub-regulated areas (e.g. digital economy) or insufficiently regulated, such as the underground economy with its negative aspects: tax evasion, the expansion of "black labour", lack of social and health insurance, inefficient public administration, unfair competition, fraud, money laundering, corruption, smuggling, drug trafficking, organized crime etc (Mandal et al., 2017).

Vulnerability of national economies occurs through two vectors, mutually reinforcing: the underground economy and corruption in the public sector. Therefore, in the context of globalization, it is imperative to analyse the issue of corruption, since economic openness facilitates the propagation of corruption. Corruption is a multidimensional as well as universal concept (Kurer, 2005; Genaux, 2004), a phenomenon without frontiers. Corruption

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means, in fact, the abusive use of power by a state official for personal material, social or political benefits. In other words, corruption is an exceeding of authority and violating official powers and duties regulations, including code of conduct and ethical standards, and/or social behavioural, moral, and ethical norms. Practically, a civil servant, in an official or an administrative organization, illegitimately uses resources of the organization to gain personal or group benefits, but not to implement the functions and objectives of the organization (Nisnevich, 2016). Lately, more than ever, the phenomenon of subterranean economy had favourable conditions for proliferation, being supported by a complex of economic, institutional, political, social and moral factors. E.g., the existence of bureaucratic control, corruption, and higher tax rates in the formal economy may determinate firms to operate in the informal sector - subterranean economy (Gerxhani, 2004; Schneider & Enste, 2000). Expanding the phenomenon of the underground economy brings to the present the need to know and understand the causes of the occurrence and the development of its activities, in order to find the most effective means of counteracting their negative consequences. Unregistered economic activity can't be neglected because it constitutes a serious impediment to the healthy economic development of national and global economies. The existence of a subterranean economy has potentially serious implications for economic performance and public policy (Blackburn et al., 2012). In the case of EU countries, the underground economy is considered an obstacle that could threaten the achievement of the cohesion and growth objectives of the Europe 2020 economic strategy. Research in the field shows that the underground economy is difficult to quantify. The size of the shadow economy is endogenous and depends, among others, on the rate of inflation, the marginal tax rate and how the tax savings from using cash are split between buyers and sellers (Gomis-Porqueras et al., 2014). However, modern statistical tools can provide an estimate of the extent of this phenomenon, with a reasonable degree of confidence. The dynamics of the underground economy can be analysed retroactively insofar as it identifies and combats specific manifestations: tax fraud, corruption, money laundering, etc. The main objective of the study is the analysis of the subterranean economy at national and community level and its relation to the phenomenon of corruption.

2. The underground economy – concept and taxonomy

The first step in the approach of the conceptual identification of the underground or subterranean economy is the review of the specialized literature, but also the popular perception of the phenomenon in question. Over time, researchers have formulated different definitions for the underground economy, which highlights the diversity of activities in its field of coverage and their economic goal of maximizing revenue, regardless of licit or illicit methods and means used. For example, in a study on the size of the phenomenon, the underground economy is defined by the production of goods and services (legal or illegal) not included in official estimates of Gross Domestic Product (Choi & Thum, 2005). Similarly, other authors (Schneider et al., 2010) describe the underground economy as the totality of activities not currently registered to a state body and which, if reported, would be included in the gross national product. A comprehensive definition of the underground economy, which is at the same time a taxonomy of the economic activities it includes (Table 1), was formulated by Lippert and Walker (1997). In another form, the underground economy includes unreported income from the legal production of goods and services in monetary transactions

or barter, so all economic activities which would generally be taxed (Schneider & Enste, 2000).

Table 1: The taxonomy of types of underground economic activities

Type of Activity	Monetary Transactions		Non Monetary Transactions	
Illegal Activities	Trade with stolen goods; drug dealing and manufacturing; prostitution; gambling; smuggling; fraud etc.		Barter of drugs, stolen goods, smuggling etc. Produce or growing drugs for own use. Theft for own use.	
	Tax Evasion	Tax Avoidance	Tax Evasion	Tax Avoidance
Legal Activities	Unreported income from self-employment; Wages, salaries and assets from unreported work related to legal services and goods	Employee discounts, fringe benefits	Barter of legal services and goods	All do-it-yourself work and neighbour help

Source: (Lippert and Walker,1997)

In our opinion, the underground economy is part of the real national/global economy, alongside the visible economy, which includes all unofficial economic activities, commercial or not, licit or illicit, socially dangerous or not, carried out in an organized manner, which are not registered by any state body.

Can the underground economy be measured? Literature (Feige, 1989) offers three models to estimate the size of the underground economy: 1) qualitative methods - presuppose identification of the motives, perceptions and behaviours of actors of the underground economy; 2) quantitative methods - use representative data on the structure and dynamics of the phenomenon, which is why the results are conclusive; 3) methods that do not involve systematic scientific estimations - are based on personal observations, without consideration of the context, nominal, partial or random case studies. In order to estimate the size of the subterranean economy, recent researches use a structural econometric framework that simultaneously considers both the underlying causes of the underground economy (e.g. tax and regulatory) and the hypothetical effects (e.g. participation rates and money demand). This methodology is called the multiple-indicators, multiple-causes model – MIMIC (Solis-Garcia & Xie, 2018).

3. About corruption and the underground economy in Romania and EU

Starting from the observation that both: corruption and the underground economy are socially dangerous manifestations, having as a common denominator - the non-observance of the legal norms, with the consequence of prejudicing the public budget by decreasing the tax revenues and the increase of the public expenditures, the question arises if, between the two subjects investigated can establish a relationship of interdependence? By reviewing the literature, we find that the results of the studies, according to the working methodologies and the variables mentioned, revealed different answers. (Dreher & Schneider, 2010). It was indicated a positive relationship between the proliferation of the underground economy and the corruption among the public tax officials (Fjeldstad, 2003), which, intuitively, leads us to think that in order to "survive" in the subterranean economy, sooner or later, the subjects concerned have to corrupt civil servants. We propose to investigate the relationship between corruption and the underground economy, starting from the existing data or that can be calculated for Romania and the EU countries for the period 2007-2017, since Romania is part of the EU. We will use descriptive models, correlation coefficients, regression analysis, and

tests to verify the accuracy of the results, with statistical processing being performed with the
SPSS 22 program.

3.1 Aspects regarding the level of corruption in Romania and the EU countries

The preparation, processing and descriptive presentation of data on the level of corruption
in Romania and other EU countries is based on the Corruption Perceptions Index (CPI),
released on Transparency International Romania (at the level of 2017) on the official website
(www.transparency.org.ro). The index is scaled from 0 (very corrupt) to 100 (very clean). It is
determined annually and targets citizens' perception of corruption in the public sector. In our
analysis, in order to achieve a ranking of the level of corruption in the European Union (EU)
countries, we took into account the average of the CPI scores over the period 2007-2017 for
each country (Table 2). For the intended purpose, we considered that reporting on a scale of
0-100, in which 100 is the maximum level of corruption, is sufficiently relevant.

Table 2: The level of corruption in the EU countries (2007-2017)

Country		Corruption Perceptions Index - Score evolution and average												Corruption level
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Avg.	
Denmark	DNK	94	93	93	93	94	90	91	92	91	90	88	92	8
Finland	FIN	94	90	89	92	94	90	89	89	90	89	85	90	10
Sweden	SWE	93	93	92	92	93	88	89	87	89	88	84	90	10
Netherlands	NLD	90	89	89	88	89	84	83	83	84	83	82	86	14
Luxembourg	LUX	84	83	82	85	85	80	80	82	85	81	82	83	17
Germany	DEU	78	79	80	79	80	79	78	79	81	81	81	80	20
UK	GBR	84	77	77	76	78	74	76	78	81	81	82	79	21
Austria	AUT	81	81	79	79	78	69	69	72	76	75	75	76	24
Ireland	IRL	75	77	80	80	75	69	72	74	75	73	74	75	25
Belgium	BEL	71	73	71	71	75	75	75	76	77	77	75	74	26
France	FRA	73	69	69	68	70	71	71	69	70	69	70	70	30
Estonia	EST	65	66	66	65	64	64	68	69	70	70	71	67	33
Portugal	PRT	65	61	58	60	61	63	62	63	64	62	63	62	38
Slovenia	SVN	66	67	66	64	59	61	57	58	60	61	61	62	38
Cyprus	CYP	53	64	66	63	63	66	63	63	61	55	57	61	39
Spain	ESP	67	65	61	61	62	65	59	60	58	58	57	61	39
Malta	MLT	58	58	52	56	56	57	56	55	60	55	56	56	44
Poland	POL	42	46	50	53	55	58	60	61	63	62	60	55	45
Lithuania	LTU	48	46	49	50	48	54	57	58	59	59	59	53	47
Czech Rep,	CZE	52	52	49	46	44	49	48	51	56	55	57	51	49
Latvia	LVA	48	50	45	43	42	49	53	55	56	57	58	51	49
Hungary	HUN	53	51	51	47	46	55	54	54	51	48	45	50	50
Slovakia	SVK	49	50	45	43	40	46	47	50	51	51	50	47	53
Croatia	HRV	41	44	41	41	40	46	48	48	51	49	49	45	55
Italy	ITA	52	48	43	39	39	42	43	43	44	47	50	45	55
Romania	ROU	37	38	38	37	36	44	43	43	46	48	48	42	58
Greece	GRC	46	47	38	35	34	36	40	43	46	44	48	42	58
Bulgaria	BGR	41	36	38	36	33	41	41	43	41	41	43	39	61

Source: (own processing, based on data from Transparency International, 2017)

The results, presented in Figure 1, show that the Nordic countries (DNK, FIN, SWE) have
a lowest levels of corruption. The highest level is in the South of Europe (BGR, GRC, ROU).

Also, in former socialist countries the level of corruption is higher than in Western countries. In Romania, the level of corruption remains above the European average, even though the dynamics of the last 10 years still show a decreasing trend.

Figure 1: The level and dynamics of corruption in ROU and EU countries (average on 2007-2017)
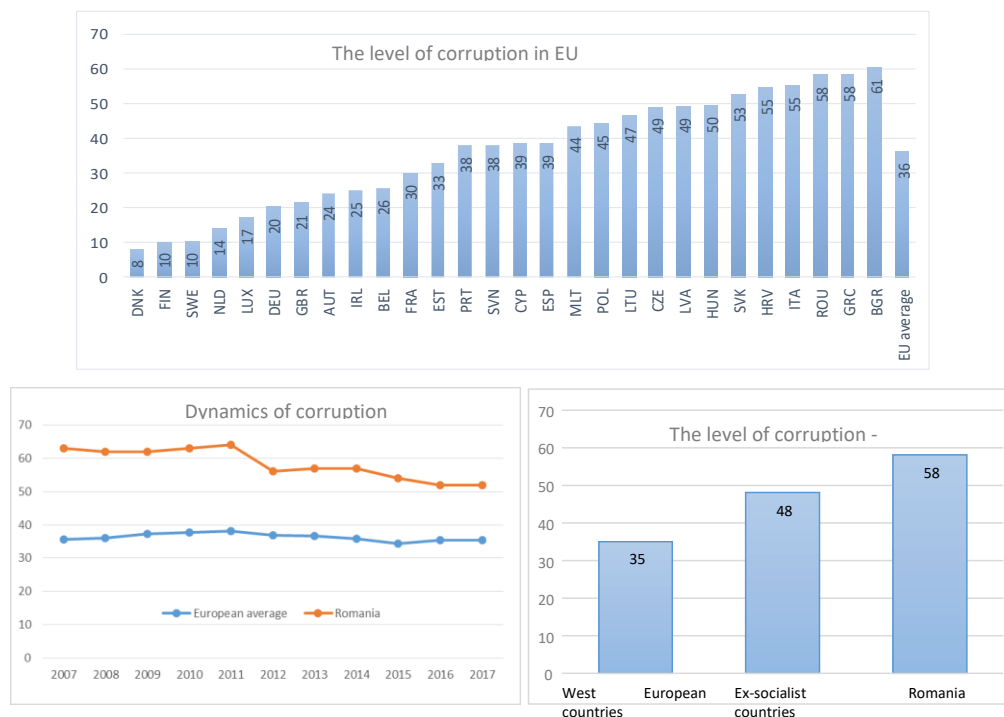
Source: (own processing, based on data from Table 2)

3.2 Estimates of the dynamics of the underground economy in Romania and the EU countries

To estimate the level and dynamics of the underground economy (expressed as a share of Gross Domestic Product - GDP), during 2007-2017, in ROU and the EU countries, we use the data provided by Schneider (2016) and Medina & Schneider (2018) determined by applying the MIMIC model. The results obtained are shown in Table 3 and Figure 2. It is noticed that the countries with the lowest level of underground economy are Austria, Luxembourg and the Netherlands, and those with the highest levels are Bulgaria, Croatia and Romania.

Figure 2: The size and dynamics of the underground economy in ROU and EU (average on 2007-2017)
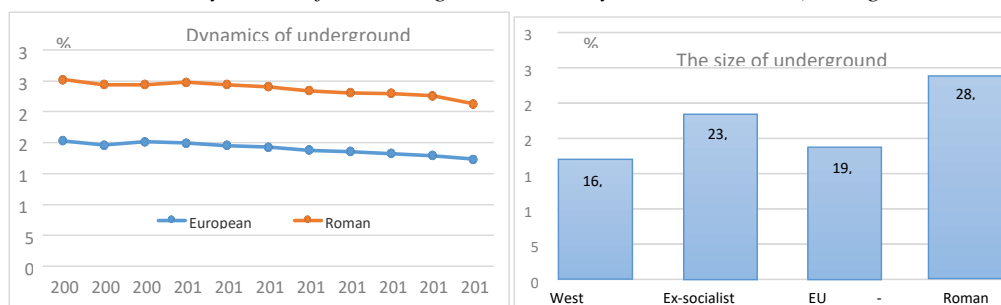
Source: (own processing, based on data from Table 3)

It is noticed that the countries with the lowest level of underground economy are Austria, Luxembourg and the Netherlands, and those with the highest levels are Bulgaria, Croatia and Romania. The European average is 19.1% of GDP (Figure 2). In other words, in the analysed period, the equivalent of one-fifth of EU GDP, on average, was lost due to the underground economy. The dynamics of the phenomenon in Romania shows a decreasing trend in tune with the EU average but at higher average values with over 10 percentage points. Another suggestive comparison is between levels of underground economies of former socialist countries, western countries and Romania.

Table 3: The size of the underground economy of EU countries from 2007 to 2017 (% GDP)

Country	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Avg.
Austria	9,4	8,1	8,5	8,2	7,9	7,6	7,5	7,8	8,2	7,8	7,1	8,0
Luxembourg	9,4	8,5	8,8	8,4	8,2	8,2	8,0	8,1	8,3	8,4	8,2	8,4
Netherlands	10,1	9,6	10,2	10,0	9,8	9,5	9,1	9,2	9,0	8,8	8,4	9,4
UK	10,6	10,1	10,9	10,7	10,5	10,1	9,7	9,6	9,4	9,0	9,4	10,0
France	11,8	11,1	11,6	11,3	11,0	10,8	9,9	10,8	12,3	12,6	12,8	11,5
Ireland	12,7	12,2	13,1	13,0	12,8	12,7	12,2	11,8	11,3	10,8	10,4	12,1
Germany	14,7	14,2	14,6	13,9	13,2	12,9	12,4	12,2	11,2	10,8	10,4	12,8
Denmark	14,8	13,9	14,3	14,0	13,8	13,4	13,0	12,8	12,0	11,6	10,9	13,1
Finland	14,5	13,8	14,2	14,0	13,7	13,3	13,0	12,9	12,4	12,0	11,1	13,2
Sweden	15,6	14,9	15,4	15,0	14,7	14,3	13,9	13,6	13,2	12,6	12,1	14,1
Slovakia	16,8	16,0	16,8	16,4	16,0	15,5	15,0	14,6	14,1	13,7	13,0	15,3
Czech Rep.	17,0	16,6	16,9	16,7	16,4	16,0	15,5	15,3	15,1	14,9	14,1	15,9
Belgium	18,3	17,5	17,8	17,4	17,1	16,8	16,4	16,1	16,2	16,1	15,6	16,8
Portugal	19,2	18,7	19,5	19,2	19,4	19,4	19,0	18,7	17,6	17,2	16,6	18,6
Spain	19,3	18,4	19,5	19,4	19,2	19,2	18,6	18,5	18,2	17,9	17,2	18,7
Italy	22,3	21,4	22,0	21,8	21,2	21,6	21,1	20,8	20,6	20,2	19,8	21,2
Hungary	23,7	23,0	23,5	23,3	22,8	22,5	22,1	21,6	21,9	22,2	22,4	22,6
Slovenia	24,7	24,0	24,6	24,3	24,1	23,6	23,1	23,5	23,3	23,1	22,4	23,7
Greece	25,1	24,3	25,0	25,4	24,3	24,0	23,6	23,3	22,4	22,0	21,5	23,7
Poland	26,0	25,3	25,9	25,4	25,0	24,4	23,8	23,5	23,3	23,0	22,2	24,3
Malta	26,4	25,8	25,9	26,0	25,8	25,3	24,3	24,0	24,3	24,0	23,6	25,0
Latvia	27,5	26,5	27,1	27,3	26,5	26,1	25,5	24,7	23,6	22,9	21,3	25,4
Cyprus	26,5	26,0	26,5	26,2	26,0	25,6	25,2	25,7	24,8	24,2	23,6	25,5
Estonia	29,5	29,0	29,6	29,3	28,6	28,2	27,6	27,1	26,2	25,4	24,6	27,7
Lithuania	29,7	29,1	29,6	29,7	29,0	28,5	28,0	27,1	25,8	24,9	23,8	27,7
Romania	30,2	29,4	29,4	29,8	29,4	29,1	28,4	28,1	28,0	27,6	26,3	28,7
Croatia	30,4	29,6	30,1	29,8	29,5	29,0	28,4	28,0	27,7	27,1	26,5	28,7
Bulgaria	32,7	32,1	32,5	32,6	32,3	31,9	31,2	31,0	30,6	30,2	29,6	31,5

Source: (own processing, based on data from Schneider, 2016; Medina & Schneider 2018)

3.3 Relationship between corruption and the underground economy - case study on EU

Next, we aim to investigate the relationship between corruption and the underground economy by capitalizing on the statistical data presented in the previous paragraphs and the intuitive finding that the phenomenon of corruption influences the level of the underground economy. In the regression analysis, we will consider independent variable corruption and the dependent variable underground economy. The results are shown in Table 4 and Figure 3.

Interpreting the results obtained, we find that there is a correlated disposition of the two variables discussed, for an $R^2 = 0.595$. Therefore, 59.5% of the underground economy variation may be the effect of corruption on average across the sample of 28 states for the

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2007-2017 period. In the table 4, we observe a correlation coefficient of 0.771, suggesting a close relationship between the variables analysed and the positive sign. Increasing the level of corruption will therefore have the effect of increasing the underground economy. The 0.003 regression coefficient of the corruption level variable in relation to the underground economy variable is positive and significant at a threshold of 0.01. It means that an increase with a point of corruption will cause an average increase of the underground economy by 0.003 points.

Table 4: The results of statistical data processing

Correlations		Corruption level	Underground Economy
Corruption level	Pearson Correlation	1	,771**
	Sig. (2-tailed)		,000
	N	28	28
Underground Economy	Pearson Correlation	,771**	1
	Sig. (2-tailed)	,000	
	N	28	28
**. Correlation is significant at the 0.01 level (2-tailed).			

Coefficients[a]		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	Constant	,069	,022		3,213	,003
	Corruption level	,003	,001	,771	6,177	,000
a. Dependent Variable: Underground Economy						

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,771[a]	,595	,579	,04629
a. Predictors: (Constant), Corruption level		b. Dependent Variable: Underground Economy		

Source: (own processing)

Figure 3: The correlation between the underground economy and corruption
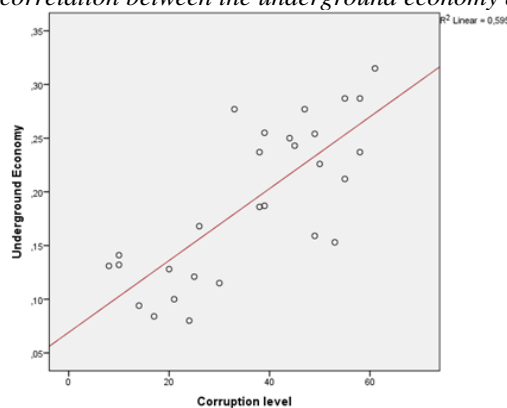
Source: (own processing)

4. Conclusion

Our study, based on the most recent estimates of researchers in the field, may serve as a benchmark for appropriate corrective action. The study highlights a direct link between corruption and the underground economy - increasing corruption leading to an increase in the level of underground economy. At the level of EU countries (including Romania), the dynamics of the last 10 years indicate a light downward trend in the level of corruption and the underground economy.

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BENCHMARKING AS A TOOL FOR EFFECTIVE ENHANCEMENT OF SLOVAK CITIES AND REGIONS IN THE GLOBAL ENVIRONMENT

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Abstract. The topic of this paper is the practical application of global benchmarking systems, in the field of public administration and especially in the development of municipalities and regions in global environment. The objective of the authors was to highlight the importance of applied strategic approach in municipalities and regions in a global environment as one of the important topics in the sector. The authors reviewed the application of benchmarking in real conditions of the Slovak Republic in period 2005 – 2017. In this paper they present real life cases and researches in 40 cities in total, representing 42% of the urban population of Slovakia. Trends in urban and regional management are based on general trends in public administration, nevertheless are these at the same time characterized by some specificities. The general global trends include the strategic approach applications, the client orientation, and the value-based service orientation. A specific global trends is the shift from the perception of cities and regions as territorial units to urban regions as natural spatial units. The management of organizations in a constantly changing global environment requires a certain set of navigation tools and indicators to assess the situation from different perspectives and to monitor how organizations achieve their set global strategic goals.

Keywords: Benchmarking, Globalization, Regional Development, Smart City

JEL Classification: D73, F63, H20

1. Introduction

Dôležitým faktorom rozvoja miest, obcí a celých území je aplikácia moderných prístupov a metód strategického manažmentu, *scorecardov* a *benchmarkingu*. V zahraničí sú scorecardy a benchmarking využívané už približne dve desaťročia a organizácie, ktoré ich aplikujú vo svojom riadení, ich hodnotia ako významný prvok úspešnosti, a to nielen v podnikateľsky orientovaných odvetviach, ale aj v neziskovom sektore, vrátane verejnej správy (Trelova & Olsavsky, 2017). V Slovenskej republike využívajú scorecardy skôr podnikateľské subjekty, aj to v menšom rozsahu. Benchmarking sa úspešne dlhodobo, viac než jednu dekádu, aplikuje napr. v rámci členských miest Únie miest Slovenska.

1.1 Globalizácia, benchmarking a trendy v manažmente miest a regiónov

Trendy v manažmente miest a regiónov nadväzujú na všeobecné trendy vo verejnej správe, zároveň sa však vyznačujú určitými špecifikami. Paskrtova (2016) uvádza, že k všeobecným globalizačným trendom patrí aplikácia strategického prístupu, aplikácia klientskeho prístupu, orientácia na hodnotu poskytovaných služieb, resp. na hodnotu za peniaze. Špecifickým globalizačným trendom je posun od vnímania miest a regiónov ako územnosprávnych jednotiek k mestským regiónom ako prirodzeným priestorovým jednotkám. Jedným z kritických faktorov úspešnosti praktickej aplikácie nových manažérskych prístupov v miestnom a v regionálnom rozvoji je ich zapracovanie do komunálnych a regionálnych politík, ktoré si osvoja spoločenskí a politickí aktéri a ktoré sa implementujú do praxe aktérov na úrovni miest a regiónov.

Podmienkou udržateľného a efektívneho rozvoja miest a regiónov Slovenska a globalizácie a ich konkurencieschopnosti v Európskom priestore je podľa niektorých autorov (Novackova et al., 2016) zmena prístupu vlády a územnej samosprávy k stratégiám území, osvojenie si strategického myslenia, transformácie úloh z administrátorov, primárne zodpovedných v politickej línii, na manažérov území zodpovedajúcich sa občanom v príslušnom území ako klientom.

Riadenie organizácií v neustále sa meniacom prostredí si vyžaduje určitý súbor „navigačných" nástrojov a ukazovateľov, aby mohli vyhodnotiť situáciu z rôznych perspektív a sledovať, ako sa organizácií darí dosahovať stanovené strategické ciele. Ako rozvedieme v ďalších častiach, v plnom rozsahu to platí aj o organizáciách verejnej správy. Podľa niektorých autorov (Kaplan & Norton, 2000) systém, ktorý spĺňa uvedené požiadavky, vznesené z praxe, bol „na mieru praxe" navrhnutý v polovici 90-tych rokov 20. storočia pod názvom Balanced Scorecard. Úspešne sa rozšíril najprv do podnikateľskej praxe, ale veľmi rýchlo bol aplikovaný aj vo verejnej správe. Už začiatkom 21. st. boli publikované práce s výsledkami a skúsenosťami z nasadenia Balanced Scorecard vo vládnych a neziskových organizáciách (Niven, 2003).

Balanced Scorecard (ďalej len „BSC") je niečo viac, než len systém manažérskeho výkazníctva, alebo merací systém výkonnosti. BSC prepája ukazovatele so stratégiou, "prekladá" víziu, poslanie a stratégiu organizácie do zrozumiteľného súboru ukazovateľov výkonnosti, ktoré dávajú top manažmentu rýchly, ale komplexný pohľad na organizáciu. BSC rozširuje súbor bežných súhrnných finančných a prevádzkových ukazovateľov. BSC podobne ako tradičné systémy manažérskeho výkazníctva, kladie dôraz na dosahovanie finančných výsledkov, pridáva však identifikáciu, sledovanie a riadenie "hybných síl", ktoré tieto výsledky umožňujú dosiahnuť. Ciele a ukazovatele BSC sledujú výkonnosť organizácie zo štyroch perspektív: finančnej, zákazníckej, interných procesov (prevádzkovej) a učenia sa a rastu (inovačnej). Jednotlivé perspektívy sú vodidlom k vybraným oblastiam a usmerňujú strategické myslenie na hľadanie kauzálnych súvislostí medzi pohľadmi, ale aj v rámci nich (Kaplan & Norton, 2006). Schéma perspektív je znázornená nasledovne.

Figure 1: Schéma perspektív

Source: (Papula & Papulova, 2012)

1.2 Integrácia BCS a benchmarkingu s vybranými manažérskymi nástrojmi

Aplikácia systému BSC a metódy benchmarkingu má špecifickú rolu v manažmente a v správe municipalít, ale aj v informačnom manažmente. BSC prepája stratégiu s prevádzkovou výkonnosťou a "vyberá" z množstva údajov "rozumný" rozsah a potrebnú kvalitu pre municipalitu "akurátneho" vedomostného obsahu (Saxunova et al., 2017). Dobre navrhnutý BSC poskytuje "informácie s vysokou pridanou hodnotou", a preto môže byť popri svojej primárnej úlohe v stratégii aj riešením na elimináciu informačnej záplavy. Benchmarking umožňuje uvedený obsah efektívne vyhodnocovať tak, aby sa zo získaných poznatkov municipality mohli učiť a zlepšovať svoje riadenie, procesy, činnosti, služby a ich výkonnosť a efektívnosť (Mittelman et al., 2017; Terjesen & Patel, 2017). Dodatočnou pridanou hodnotou benchmarkingu môže byť teda jeho použitie v informačnom manažmente municipalít.

Podľa nášho názoru podmienkou úspešného používania ako BSC, tak aj benchmarkingu sú vhodné informačné technológie a spoľahlivá údajová základňa. BSC a benchmarking, ako ďalšie systémy municipalít, tak môžu zvýšiť riziko informačnej a údajovej záplavy. Pri správnom nasadení sú však *prostriedkami* na jej zvládnutie. Pri tom je jedným z kľúčových faktorov úspešnosti *informačný a vedomostný manažment* (Wojcak & Barath, 2017, Qureshi, 2018). BSC, benchmarking a informačný manažment sú však primárne *prostriedkami* na dosiahnutie hlavného *cieľa*: realizácie stratégií municipalít a regiónov a efektívnej verejnej správy.

Aj z vedeckej literatúry (Vilcekova & Starchon, 2017) vyplýva, že uvedená orientácia na klientov mestských a samosprávnych úradov vôbec, predstavuje opäť styčnú plochu so systémom Balanced Scorecard, primárne s jeho klientskou perspektívou. V uplynulých dvoch dekádach prebieha významná kvalitatívna zmena v prístupe k občanov zo strany mestských úradov. Vznikajú klientske centrá, úrady sa stávajú transparentnejšími a informačne otvorenými pre občanov, zavádzajú sa elektronické služby. Dochádza k modernizácii rozhrania „občan – municipalita".

2. Balanced Scorecard, benchmarking a concept Smart City

Smart City (ďalej len „SC") je novým prístupom v rozvoji miest a mestských regiónov, ich spravovaní, financovaní a plánovaní, ktorý využíva inovácie (Gregusova et al., 2016). Zavádzanie riešení SC do miest je postupný proces. Prináša so sebou zmeny, na ktoré sa treba zodpovedne pripraviť. „Smart City je o ľuďoch a pre ľudí. Čím viac osôb sa zapojí do procesu rozvoja mesta, tým lepšie bude mesto slúžiť potrebám jeho obyvateľov". Smart City charakterizujeme ako "prostriedok na zlepšenie kvality života občanov, ktorý nadobúda čoraz väčší význam v agendách tvorcov politík" (Bundy, 2017). Smart City predstavuje najmä myšlienkový prístup zameraný na schopnosť miest reagovať na vyskytujúce sa výzvy ich územného rozvoja, ktorý je prioritne zacielený na zvyšovanie kvality života na báze inovácií (Kocisova & Stolicna, 2017). Udržateľný mestský model Smart City, podporuje aj Európska komisia. Aplikácia konceptu Smart City má rastový trend. Na začiatku roka 2014 takúto stratégiu malo 240 európskych miest nad 100 000 obyvateľov a v roku 2017 už aplikujú komplexné riešenia vlastné pre koncept Smart City takmer všetky západoeurópske mestá. EÚ podporuje platformu vedomostí (SCIS), slúžiacu na výmenu údajov, skúseností a know-how a na spoluprácu pri vytváraní rozumných miest. SCIS spája tvorcov projektov, mestá, výskumné inštitúcie, priemysel, odborníkov a občanov z celej Európy.

Možné riešenie vidíme v aplikácii Balanced Scorecard ako systémového základu pre Smart City. Vedecká literatúra (Mamojka & Mullerova, 2016) uvádza, že BSC umožňuje manažérom v samospráve vyvážiť záujmy občanov, finančné možnosti, vnútorné procesy a kapacitu samosprávy ako civilnej služby. Umožňuje tiež prepojenie medzi oblasťami plánovania, realizácie a výkonnosťou. Samosprávy na v krajinách západnej Európy západe, ale aj v SR používajú na sledovanie výkonnosti scorecardy (systémy ukazovateľov). Tieto sú však iba zriedkavo *vyvážené* (Strazovska & Duris, 2017, Powel & Rhee, 2013). Napríklad neumožňujú rýchlo diagnostikovať nedosiahnutie ukazovateľa výkonnosti poskytovania služieb občanom. Systém ukazovateľov Balanced Scorecard by mal zobraziť náklady na jednotku výsledku (finančná perspektíva), procesy, ktoré je potrebné zmeniť (perspektíva interných procesov) alebo potrebné školenia (perspektíva učenia a rastu). Štúdiom prameňov (Stevcek & Ivanco, 2017) sme zistili, že táto myšlienka je už rozpracovaná nielen teoreticky, ale aj aplikovaná v praxi. Príklad súčinnosti prístupov BSC a Smart City je ilustrovaný v schéme na obrázku.

Figure 2: Synergia BSC a konceptu Smart City
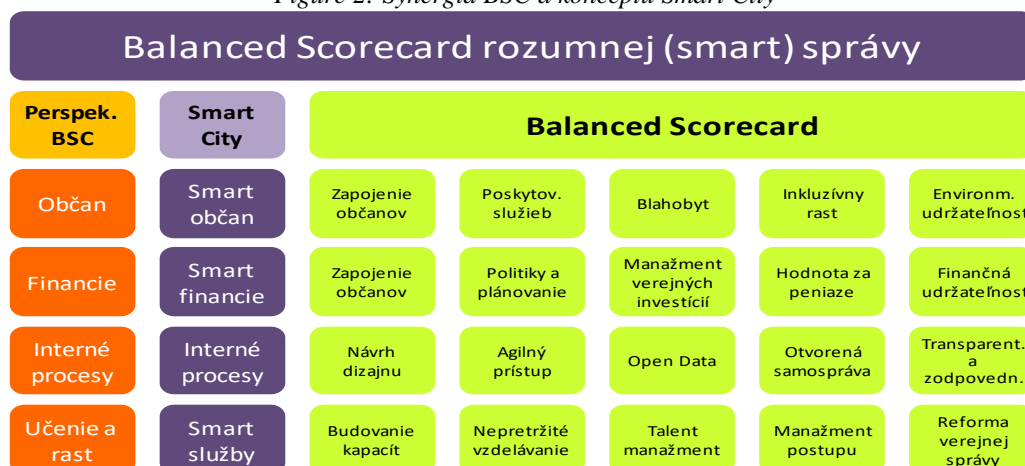
Source: (Freebalance, 2016)

2.1 Výskum využívania scorecargov a benchmarkingu v mestách Slovenskej republiky

Využívanie scorecardov a benchmarkingu v mestách Slovenskej republiky bolo predmetom vlastného kvalitatívneho výskumu realizovaného v roku 2017. *Cieľom výskumu* bolo zistenie a vyhodnotenie rozsahu a spôsobu využívania scorecardov a benchmarkingu v riadení a rozvoji miest v SR. Sledovaným obdobím boli roky 2005 - 2016, t.j. od implementovania prvej etapy komunálnej reformy - decentralizácie, ktorá prebehla v roku 2004 prakticky až do súčasnosti.

Zisťovanie stavu bolo vykonané formou elektronického štruktúrovaného dotazníka, ktorý bol odoslaný mestám v SR. Mestá boli oslovené priamo a s odporúčaním Asociácie komunálnych ekonómov, Asociácie prednostov úradov miestnej samosprávy a Komunálneho výskumného a poradenského centra. Časť respondentov využila pri vypĺňaní dotazníka možnosť telefonickej podpory. V 43 mestách, ktoré vyplnili dotazník, žilo 1,723 milióna obyvateľov, t.j. 59,4% mestskej populácie a 32% celkovej populácie SR.

2.2 Metódy skúmania využívania scorecargov a benchmarkingu v mestách Slovenskej republiky

Na dosiahnutie stanovených cieľov boli zvolené viaceré metódy skúmania ako aj metódy získavania a spracovávania údajov. Pri získavaní empirických údajov sme aplikovali metódy:
- primárny zber údajov pomocou elektronického štruktúrovaného dotazníka v tabuľkovom procesore,
- telefonické dopytovanie k vyplneným odpovediam a / alebo konzultácie v prípade nejasností k zneniam otázok alebo k uvedeným odpovediam respondentov,
- analýza programov hospodárskeho a sociálneho rozvoja respondujúcich miest, programových rozpočtov, záverečných účtov a ostatných relevantných verejne dostupných údajov a dokumentov, publikovaných na webových sídlach miest.

3. Conclusion

Odpovede poskytlo 43 miest, t.j. na základe vyplnených dotazníkov bolo analyzované využívanie manažérskych nástrojov scorecardingu a benchmarkingu v 43 % z výberového súboru a približne 31% zo základného súboru miest. Dvojnásobne vyššia miera návratnosti vyplnených dotazníkov oproti očakávanej je výsledkom zmeny prístupu počas priebehu zberu. Pôvodne plánovaný zber odoslaním elektronickej pošty sme doplnili o aktívne telefonické kontaktovanie respondentov, oslovených primárne e-mailom. Bez aktívnej telefonickej podpory a bez podpory zo strany AKE a APUMS by miera návratnosti dosiahla približne polovicu odhadovanej hodnoty, t.j. 20%.

Na základe 43% miery návratnosti vyplnených dotazníkov a z poskytnutých odpovedí môžeme konštatovať nielen záujem a pozitívny prístup miest k danej problematike, ale aj reálnu vedomostnú bázu a dlhoročné skúsenosti s využívaním skúmaných metód. Na úrovni miestnej samosprávy na Slovensku bol prieskum tohto druhu a rozsahu a v časti scorecardy a v ich kombinácii s benchmarkingom vykonaný zrejme po prvýkrát. V prípade samotného benchmarkingu bolo v rokoch 2006 - 2016 vykonaných niekoľko výskumov, v rámci projektu Benchmarkingu slovenských miest.

V mestách, ktoré odpovedali na dotazník, žilo 1,723 milióna obyvateľov, t.j. približne 59,4% mestskej populácie a približne 32% celkovej populácie SR. Vo vzorke vyplnených odpovedí sú zastúpené mestá zo všetkých samosprávnych krajov - najviac z Trnavského samosprávneho kraja a z Nitrianskeho samosprávneho kraja.

Použitie definične úplného systému ukazovateľov Balanced Scorecard sme vo vzorke 43 respondujúcich miest nezistili. Tridsaťšesť miest, t.j. 84% uviedlo, že používa nejaký systém ukazovateľov (scorecard alebo dashboard). Sedem miest, t.j. 16% uviedlo, že nepoužívajú žiadny systém ukazovateľov. Devätnásť miest, t.j. 44%, používalo finančný scorecard, založený na finančných alebo rozpočtových ukazovateľoch. Výrazná väčšina, 86% z týchto miest zároveň zdôraznila, že pravidelné vyhodnocovanie finančných a rozpočtových ukazovateľov považuje za postačujúce. Multikriteriálny scorecard, používalo 6 miest (14%) zo skúmanej vzorky.

K rozsahu využívania scorecardov sa vyjadrili najmä mestá, ktoré využívajú scorecard HSR alebo multikriteriálny scorecard - vyjadrilo sa 13 zo 17, t.j. približne 76% miest, využívajúcich uvedené scorecardy. Z 13 miest používali scorecardy v širokom rozsahu, t.j. na meranie efektívnosti úradu, podriadených organizácií mesta v 7 mestách, t.j. približne v 54% miest. V šiestich mestách - 46%, využívali scorecardy HSR alebo multikriteriálne scorecardy v užšom rozsahu na vybraných útvaroch mestského úradu alebo vo vybraných organizáciách riadených mestom. Možnosť využitia v rozsahu jedného útvaru (napr. územného rozvoja, ekonomického útvaru apod.) nevyznačilo žiadne mesto.

Potvrdilo sa naše očakávanie, že prevládajúcim spôsobom využívania systémov finančných a rozpočtových ukazovateľov, uvádzaným mestami, bude využitie v užšom rozsahu - v rámci vybraných útvarov mestského úradu alebo vo vybraných organizáciách riadených mestom.

Využitie partikulárneho scorecardu na špecifický účel a / alebo v časovo ohraničenom rozsahu uviedlo 10 z celkového počtu 36 miest, ktoré uviedli používanie scorecardu. Uvádzaným dôvodom aplikácie takéhoto scorecardu boli väčšinou projekty, na ktoré mestá získali nenávratný finančný príspevok pri čerpaní zdrojov zo štrukturálnych fondov EÚ prostredníctvom výziev vyhlásených rôznymi riadiacimi orgánmi.

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QUALITY OF LIFE EVALUATION FOR LARGE CITIES IN GLOBALIZED WORLD

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Abstract. Modern globalized world is characterized by the significant economic and social inequalities. The global challenge of improving the quality of life in the country in general and in large cities is the most important strategic task of social and economic development nowadays. Quality of life largely depends on urbanization processes. The quality of life evaluation is made for five cities of the Volga Federal District of the Russian Federation for the period 2008-2015. To evaluate the quality of life, statistical data is standardized by introducing normalized indices. Further, the integral index of life quality is calculated according to normalized set of indicators. In 2015, Nizhny Novgorod was on the first place. Ufa is on the second place, following the leader with a small gap. The third place is given to Kazan, the fourth place - to Samara. And, finally, Perm closes this ranking. It should be noted that since 2008 mainly all the large cities retained their positions due to the integral index of the quality of life. Ranking of five Russian large cities on the index of the quality of life gives possibilities to city stakeholders to set benchmarks and the right goals for achieving a prosperous life of citizens in current international circumstances.

Keywords: quality of life, well-being, assessment, city, Russia.

JEL Classification: J18, O15, F60

1. Introduction

The challenge of improving the quality of life in the country in general and in large cities of Russia is the most important strategic task of social and economic development nowadays. Quality of life largely depends on urbanization processes. For example, some papers analyse the impact of household characteristics such as urbanization degree on the differentiation of household consumption expenditure based on Europe and Russia (Beglova et al, 2015; Varlamova & Larionova, 2016). The strongest interest to the problem of quality of life is observed, first of all, in prosperous large cities, regions and countries, whose leadership is puzzled not so much by the issues of social protection and support of the poor, as by the problems of sustainable social and economic development. Development here means that each successive generation lives in better conditions than the previous one. It is the quality of life of the population, and not the individual quantitative characteristics of socio-economic indicators, that the leadership of Russia recognizes as the main goal of the development of the state.

Research related with the problems of improving the quality of life of the population is becoming increasingly important in the modern world. This problem has socio-economic nature, because the adoption of the right management decisions is necessary to continuously improve the quality of life of the population of the state, region, city. In this connection, the need for applied research of this category arises in large Russian cities, which in turn consists of a set of various components of socio-economic life, allowing not only to assess the real state of economic and social development, but also to manage them in the most effective manner. The quality of life of the population is characterized by a large number of indicators, which have objective and subjective, quantitative and qualitative dimensions. It is quite difficult to single out and study all of their totality. Thus, it is needed to analyse different research approaches to the quality of life evaluation.

2. Literature review

There is a set of papers devoted to the quality of life evaluation in urbanized and rural areas. Some of the evaluations are based on objective dimensions, some on subjective dimensions. D'Acci (2014) analyses such kinds of methods for evaluation of urban quality of life as monetary (Hedonic Price, Willingness-to-pay, Cost-Benefit, Positional Value), subjective (life satisfaction, subjective wellbeing, ranking/rating evaluation) and quantitative (how many urban attractions there are in the city, and how they are distributed on its planimetry).

Zhu (2001), using data envelopment analysis (DEA), demonstrates how to develop a multidimensional measure to characterize the quality of life and identify its best-practice frontier which balances work and family life and judges practical comfort. Benchmarks are introduced into DEA models to implicity reflect tradeoff information on quality-of-life related factors and to incorporate evaluation standards. Critical quality-of-life factors are identified in a multidimensional construct. Golant and McCutcheon (1980) assessed how representative the objective quality of life in the research community was in order to provide a basis for judging the external validity of environmental-behavioural research findings that will emerge from future investigations. The central city and county units of a U.S. Midwestern metropolitan area were categorized into four geographic reference zones with structural attributes that differentiated them along a city-suburban-rural continuum. Within this geographic framework, they evaluated how eleven major categories of the community's quality of life compared, and to unambiguously assign the community's quality of life a position along the city-suburban-rural continuum.

Subjective dimension of the quality of life is presented by Santos et al (2007). As part of a project to monitor the quality of life in the city of Porto, a survey of the resident population was conducted in order to study the citizens' perceptions of their local quality of life and its evolution in recent years. This analysis is complemented by a multivariate analysis that allows the grouping of the interviewees in large homogenous groups and their social and economic characterisation. Based on the results achieved, they highlight the usefulness of the qualitative analysis of the quality of life to support the definition of urban policies.

Another interesting research aimed at comparing the effects of different sets of predictors on quality of life in an urban environment was made by Tartaglia (2013). Four different types of predictors were considered: socio-demographic characteristics, quality of social relations

(perceived social support), place attachment and healthy lifestyle. After testing the influence of different groups of predictors on the dimensions of quality of life the great role of perceived social support and place attachment in promoting quality of life was pointed out. That result suggests the importance of community interventions in urban environment.

The aim of Van Leeuwen et al (2006) research is to develop an evaluation framework that can be used in the assessment of urban green spaces by means of criteria linked to the notion of quality of life. It is noted that the relation between quality of life and urban green is regarded as a positive one, and often described as significant. In order to improve the quality of life by means of urban green, decision makers need better information regarding the quantity and quality of urban green available in their city.

To accomplish a comprehensive evaluation of the quality of life for urban youth in a community Green et al (2005) developed a performance logic model to guide the collection and reporting of evaluation data from grantees, as well as track community-wide indicators of quality of life for youth. Organizations seeking funding were required to respond to annual requests for proposals and obtain approval for their service plan. Other key features of this comprehensive evaluation included the development of a performance index summarizing overall performance excellence and the utilization of a post hoc measure of change due to service productivity.

Budowski et al (2016) argue that the quality of life (QOL) depends on objective living conditions, their subjective evaluation and the ability to maintain or improve the situation of "embedded individuals". They analysed qualitative interviews (2008–2010) with around 25 households in precarious prosperity in two cities (Pamplona, Spain and Lausanne, Switzerland) to elaborate their QOL. Lack of future perspectives and opportunities lowered quality of life. Reframing, adaption and accepting the situation sometimes moderated quality of life.

According to Borsdorf (1999), the quality of life criterion may be used to complete the sustainability indicators. With this in mind, the paper looks at the quality of life in two alpine cities. First, it is analysed how quality of life can be measured. Then it is examined how the physical and human environments peculiar to the alpine regions influence the perception of the quality of life.

Gu et al (2016) in their research investigate an integrated methodology to evaluate quality of life by measuring the aggregated values of urban services: education services, shopping services, and medical care services. Urban quality of life inevitably decreases under the conditions of insufficient service facilities and transport infrastructure. All the values of urban services are evaluated in three stages: existing values, accessible values, and perceived values. As a result, this paper integrates both the objective and subjective approaches of quality of life calculation and illustrates that quality of life distribution in Nanjing is spatially unbalanced and unequal among different population groups.

The purpose of Bonatti et al (2017) research is to investigate the changes in well-being in the Italian metropolitan cities. The paper intends to show how the well-being level in Italian cities has changed in recent years, taking into consideration ten different dimensions of well-being. The authors proceeded to the construction of a composite well-being index in Italian cities on the basis of new theoretical concepts and complete and detailed data.

Ma and Kaplanidou (2016) in their survey examined the importance of legacy outcomes for residents' quality of life across three international sport events in Taiwan. Results revealed that tangible legacies were the most important category of legacies affecting quality of life. Specifically, infrastructure, environment, and culture were the most important in all three events. Future events elicited positive evaluations for the residents' quality of life across all legacy categories. Implications relate to variability of event type legacies and their importance for residents' quality of life.

Literature review shows that quality of life depends on such factors as social well-being, including health, education, culture and sport, economic well-being, including income and unemployment and living conditions, including safety, ecology, housing conditions. They will be used in our research for quality of life evaluation in Russian large cities.

3. Methods

The large city is the one, where more than one million inhabitants live. Five large cities of the Volga Federal District of the Russian Federation are chosen to make a comparative analysis for the period 2008-2015. They are the city of Kazan, the city of Nizhny Novgorod, the city of Perm, the city of Samara and the city of Ufa. Evaluation is based on the data of the Federal Service for State Statistics of the Russian Federation, which is published in the statistical yearbooks "Regions of Russia. Main socio-economic indicators of cities".

To determine the quality of life in the cities, a set of indicators is proposed that makes it possible to carry out a comparative evaluation. This set includes three basic components which form the system for the quality of life evaluation:
- social well-being, including health, education, culture and sport;
- economic well-being, including income and unemployment;
- living conditions, including safety, ecology, housing conditions.

Each of these components consists of statistical indicators that characterize the state of the analysed sphere of life in a city. Social well-being is evaluated using the data for the provision of medical, educational services, number of sports facilities and cultural-leisure type organizations. Medical services are assessed through the number of doctors of all specialties in health care facilities per 1000 inhabitants, the number of nursing staff in health care facilities per 1000 inhabitants, number of hospital beds per 1000 inhabitants. Educational services are assessed through the proportion of children aged 1-6 years who receive pre-school educational services and/or service of their maintenance in municipal educational institutions in the total number of children aged 1-6 years, the proportion of children aged 7-17 years, receiving general education services in municipal educational institutions, in the total number of children aged 7-17 years. In the group of culture and sport the number of sports facilities per 1000 inhabitants and the number of cultural-leisure organizations per 1000 inhabitants are used. Second component "economic well-being" is evaluated using the data for income (average monthly salary of employees of organizations, in rubles) and unemployment (the level of registered unemployment, in % of the economically active population).

Third component "living conditions" consists of housing conditions, ecology and security. Housing conditions are assessed using the data for the share of the area of dilapidated and emergency residential premises in the total area of housing, percentage of the population who

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gained housing and improved housing conditions in the reporting year in the total number of people registered as needy in dwellings, the total area of residential premises per capita. Ecology is assessed through the current (operational) costs for environmental protection, including payment for environmental services, and pollutants emitted from stationary sources into the atmosphere per 1000 inhabitants. Security is evaluated using the proportion of illuminated parts of streets, driveways, embankments in the total length of streets, driveways, embankments at the end of the year.

Statistical data can't be analysed at the first onset because of different dimensions. To make comparison possible normalized indices are measured. The technique of normalization is made using two equations. Equation 1 is used for the indicators with positive impact to the quality of life:

$$Y_i = \frac{X_i - X_{imin}}{X_{imax} - X_{imin}} \tag{1}$$

Equation 2 is used for the indicators with negative impact to the quality of life:

$$Y_i = \frac{X_{imin} - X_i}{X_{imax} - X_{imin}} \tag{2}$$

In both formula Y_i - normalized index characterizing one component of the quality of life in a city with a population more than one million inhabitants;

X_{imin}, X_{imax} – respectively the minimum and maximum values of the i-th indicator among cities with a population more than one million inhabitants.

This technique allows us not to use weighting coefficients, which usually are based on expert assumptions, and to obtain more objective results. Next, the private indices for three components and integral index of the quality of life is evaluated using normalized indicators. It can take a value from 0 to 1. We estimate the private and integral indices using the following equation 3:

$$I_o = \frac{\frac{1}{2}Y_1 + Y_2 + \cdots + Y_{n-1} + \frac{1}{2}Y_n}{n-1} \tag{3}$$

where Y_i - the normalized values of the indicators, ($i = 1, ..., .n$);
n - the number of indicators.

4. Results and discussion

At first, the private index of health for the five cities of the Volga Federal District is presented. The city Ufa has leading position. The worst situation is in the city of Perm, where a negative dynamics can be seen every year. In Samara, as well as in Perm, the situation is disappointing. In Kazan we note a reduction in the number of hospital beds per 1000 inhabitants from 11 in 2008 to 9 in 2015. It is partly due to the constant increase in the population, while hospitals remain unchanged. And in Nizhny Novgorod there is a shortage of doctors of all specialties.

Next, we analysed the education as a component of the quality of life in the city. On average, only 60-80% of children receive pre-school education and 70-90% of school education. Ideally, this indicator should reach 100% of the value. The shortage of places in preschool institutions is observed in all the studied cities. The best situation is in Nizhny

Novgorod. The opposite situation in Perm. The sharp negative dynamics is observed in Kazan (the integral index decreased from 0.889 in 2008 to 0.232 in 2015). In Samara and Ufa the situation with kindergartens and schools is improving (the value of the indicator is steadily growing by 1-3% each year).

Access to cultural and sports facilities is another integral part of the effective improvement of the quality of life in the city. The residents of the cities Ufa and Kazan are better provided with the culture and sports facilities than the residents of the city of Nizhny Novgorod and the city of Samara. In general, the level of sports facilities provision is high. With regard to the culture facilities, the leader is the city of Ufa and the outsiders are the city of Nizhny Novgorod and the city of Samara.

One of the main criteria for the quality of life of the population is its economic well-being. The results for the private index of income and unemployment show that in the last three years the best situation was in Nizhny Novgorod, while in 2008-2012 the leader was the city of Samara. The worst situation is in Perm. But, it is worth mentioning that the low figure in Perm is due only to the significantly lower average monthly wages of workers in comparison with other large cities. The unemployment rate is quite low in the city of Perm (1% in 2015). In the city of Kazan, the situation has improved significantly, starting in 2011 (in 2011 the unemployment rate was 1.26%, and it dropped to 0.58% by 2015). The average monthly wage amounted to 34790 rubles in Kazan. In the city of Ufa we note an improvement from 2013, because the unemployment declined. In general, the highest monthly salary is in the city of Ufa (35674.1 rubles). The lowest monthly salary is in the city of Perm (29740.3 rubles).

Next, let's consider the indicators associated with housing. The private index of housing conditions shows that the situation in all cities is approximately the same. The leaders are the city of Perm and the city of Samara. The city of Nizhny Novgorod is slightly behind. It can be noted that in the city of Ufa there is a sharp improvement, and in the city of Kazan, on the contrary, deterioration. The state of the environment is another criteria for the quality of life of the population of the municipality. The situation in the city of Kazan and the city of Ufa is the worst. Perhaps it is due to the large number of industrial enterprises in these cities. The city of Perm had the best environmental indicators for 2008-2015. The city of Samara and the city of Nizhny Novgorod occupy the middle positions on all ecological indicators. According to the private index of safety, the best conditions are in the city of Ufa and the city of Nizhny Novgorod. In the city of Ufa there are no unlit parts of streets at all (100% of streets, driveways, embankments are illuminated). The worst conditions are in the city of Perm, where, on average, only 60% of the streets are lit. The city of Kazan, the city of Nizhny Novgorod and the city of Samara occupy middle positions. In the city of Samara the value of the indicator increased from 54.7% in 2008 to 85.7% by 2015. In the city of Kazan and the city of Nizhny Novgorod it was respectively 92% and 96.7% in 2015. Thus, indices for seven groups of indicators (health, education, housing, safety, ecology, income and employment, culture and sport) were constructed for the Russian large cities with the population more than one million people for the period 2008-2015. Further, by aggregating them, indices of social well-being, economic well-being and living conditions of the large city inhabitants were calculated. Analyzing the results, we note that for the period 2008-2015 the leader in all three components was the city of Nizhny Novgorod. The best living conditions were provided in this city. Its population was economically and socially well. The least socially-prosperous city in the Volga Federal District was the city of Samara. The least economically-prosperous city was the city of Perm. And the worst living conditions among

five large cities were in the city of Kazan. The city of Ufa maintained average position in all three components. Further, these three indices were aggregated into one integral index.

Table 1: Integral index of the quality of life in in Russian large cities for the period 2008-2015

#	City	Integral index of the quality of life							
		2008	2009	2010	2011	2012	2013	2014	2015
1	Nizhny Novgorod	0.618	0.611	0.627	0.738	0.658	0.696	0.689	0.679
2	Kazan	0.608	0.545	0.586	0.55	0.568	0.57	0.514	0.478
3	Samara	0.442	0.428	0.465	0.422	0.364	0.472	0.46	0.467
4	Ufa	0.5	0.536	0.547	0.606	0.576	0.623	0.639	0.64
5	Perm	0.526	0.371	0.364	0.481	0.453	0.404	0.441	0.455

Source: (calculated by authors)

The results, presented in Table 1, clearly show that in 2015 the city of Nizhny Novgorod was on the first place. The city of Ufa is on the second place, following the leader with a small gap. The third place is given to the city of Kazan, the fourth place - to the city of Samara. And, finally, the city of Perm closes this ranking. It should be noted that since 2008 the situation has changed little. Mainly, all the large cities retained their positions due to the integral index of the quality of life.

5. Conclusion

Using quantitative data from the Federal State Statistics Service, authors estimated the integral index of the quality of life of the inhabitants in five Russian large cities with a population more than one million people. The results clearly show that in 2015 the city of Nizhny Novgorod was on the first place. The city of Ufa is on the second place, following the leader with a small gap. The third place is given to the city of Kazan, the fourth place - to the city of Samara. And, finally, the city of Perm closes this ranking. It should be noted that since 2008 the situation has changed little. Mainly, all the large cities retained their positions due to the integral index of the quality of life. The analysis and ranking of five Russian large cities on the index of the quality of life make possible to give valuable recommendations to city authorities and other stakeholders. These recommendations can help to determine critical quality-of-life factors and to set the right goals for achieving a prosperous life of citizens in current international circumstances.

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GLOBALIZATION IN THE NEW COUNTRIES OF THE EUROPEAN UNION

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Abstract. The main goal of this paper is to show the level of globalization and its changes that have taken place in the new Member States of the European Union (EU), exactly the former socialist countries (EU-11). The aim is also to present the reasons of differentiation in the level of globalization in these countries and the impact of globalization on economic growth. The following research methods were used: historical, literature, descriptive analysis and simple statistical methods. Statistical data used in this paper come from KOF (index of globalization and its 3 sub-indices) and Eurostat. The time range of research is 1990-2017. The main conclusions of the study are as follows: 1.The level of globalization of this group of countries has increased significantly; 2. The largest increase took place in countries where the level of globalization at the starting point was the lowest and the lowest in the most globalized countries; 3. As a result, the differences between individual countries were significantly diminished (we can see the convergence), 4. The current level of globalization of these countries is mainly the result of the combined action of both systemic transformation and the process of integration with the EU; 5. A small positive correlation exists between GDP per capita and the degree of globalization in this countries; 6. The positive impact of globalization on economic growth in the analyzed group of countries was also noted.

Keywords: globalization, the new European Union countries

JEL Classification: F60, F63, F69

1. Introduction

The process of globalization covers more and more countries. We all live in the globalizing world. In principle, there is no country that would not be affected. However, the level of globalization of individual countries is diverse. We say, some of them are more, some less globalized. What does it mean? On what basis can we say so? The answer is – we have to measure globalization. The purpose of measuring globalization is to demonstrate the degree of globalization in individual countries and to capture this process over time. Measuring globalization is very important. Without doing so, it is impossible to assess the severity or benefits of its effects, how it should be managed (if it is manageable) etc. Globalization – there is no doubts – can be better understood by measuring it (Martens et al., 2014).

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When attempts to quantify globalization are made, globalization is interpreted as internationalization.[18] This term refers to a growth of transactions and interdependence between countries. The scores mainly relate to them. But to assess the extent to which any country is more or less globalized we require much more than employing data on flows of trade and foreign direct investment. The idea of globalization includes also social and political factors (Martens et al., 2010).

Representatives of different scientific disciplines are interested in many aspects of globalization. One of them is the impact of globalization on economic growth. The historical evidence on the relationship between them has been shown by Crafts (2004). The results of many studies suggest that globalization has extended positive effect on economic growth. Globalization indeed promotes growth (Dreher, 2006). Several studies have shown that more globalized countries are also more sustainable, and in general also healthier (Martens et al., 2010). The evidence shows that globalization has spurred economic growth, promoted gender equality and improved human rights. It increased, however, income inequality (Potrafke, 2015). There has been a clear process of globalization convergence. Some studies try to show whether the globalization brings about the convergence in per capita income (Villaverde, Maza, 2011). The attempt to verify some of these theses will be taken in this paper.

The main goal of this paper[19] is to present the changes in the level of globalization and the reasons of differentiation in it between countries. The aim is also to show the relation: globalization vs. economic growth. The research covered 11 Central and East Europe (CEE) countries, namely: Bulgaria, Croatia, the Czech Republic, Estonia, Lithuania, Latvia, Poland, Romania, Slovakia, Slovenia and Hungary. They are called "post-socialist countries" or "former socialist countries". After World War II, there was a centrally planned economy system. At the turn of the 1980s and 1990s a systemic transformation began there. The process of integration with the EU has also begun in these countries. They quickly adapted to the EU requirements and became members of the EU. First of all: the Czech Republic, Estonia, Lithuania, Latvia, Poland, Slovakia, Slovenia and Hungary (1.05.2004), next Bulgaria and Romania (January 1, 2007), and the last Croatia (July 1, 2013). They belong to the so-called "new EU"[20]. Due to the specificity of these countries and their number, the abbreviation "EU-11" will be used in this paper. The time range of research is 1990-2017.

The basis for considering the changes in the level of globalization will be the KOF Index of Globalization developed in 2002. It was constructed by A. Dreher (2006). It is developed and published annually. In addition, the above index has been developed for earlier years. The other globalization indices do not have these features: Maastricht Globalisation Index (Figge, Martens, 2014), New Globalisation Index (Vujakovic, 2010) and many others (Martens et al., 2014). To describe the current level of globalization, the 2017 KOF Index of Globalization was adopted, and the previous indices were used to show the changes.

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[18] It can be also understood as: liberalization, universalisation or westernization. But it is not equivalent to any of these. It's something more (Scholte, 2008).

[19] This is a more detailed and limited to one group of countries continuation of the considerations contained in (Swadzba, 2017).

[20] "New EU" also include Cyprus and Malta. These two countries also joined the EU on May 1, 2004. These countries will not be the subject of our deliberations.

The KOF index has tree dimensions, namely: economic globalization, social globalization and political globalization. As a result, in addition to the global index of globalization, 3 sub-indices were created. Each of them is calculated on the basis of several indicators. In addition, each is assigned a specific weight[21]. These indices will also be used in this paper

Choosing the KOF index does not mean that it is free of any weaknesses. It is criticized by opponents of quantitative measuring of globalization. But such a measurement also has its advantages[22]. Accepting the measurement of globalization, it was considered that in the case of the KOF index, these disadvantages are the least important and the advantages are the most. Many researchers, who often use this index in their works, are of similar opinion (Gozgor, 2018).

2. The level of globalization in the EU-11 countries

The latest KOF globalization index (2017), as well as sub-indices, for the EU-11 countries and their place in the world ranking, is given in Table 1.

Table 1: 2017 KOF Index of Globalisation (EU-11).

Globalization Index		Economic Globalization		Social Globalization		Political Globalization	
10. Hungary	86.55	7. Hungary	88.75	15. Croatia	85.29	23. Hungary	90.94
15. Czech Rep.	84.88	10. Estonia	87.54	21. Slovak Rep. 82.76		28. Romania	89.92
18. Slovak Rep. 84.36		12. Slovak Rep. 87.00		22. Czech Rep.	82.19	33. Poland	88.82
24. Croatia	81.39	13. Czech Rep.	86.90	23. Hungary	81.16	41. Czech Rep.	85.88
25. Poland	81.32	21. Latvia	82.80	25. Lithuania	80.72	46. Bulgaria	83.95
28. Estonia	79.27	36. Slovenia	77.89	27. Poland	79.82	47. Croatia	83.93
32. Lithuania	77.43	38. Bulgaria	77.18	39. Estonia	73.81	50. Slovak Rep. 83.11	
33. Slovenia	76.91	39. Poland	77.06	40. Slovenia	71.93	54. Slovenia	82.23
34. Bulgaria	76.89	44. Lithuania	75.54	42. Bulgaria	71.34	69. Estonia	75.91
35. Romania	76.51	45. Croatia	75.37	43. Romania	70.97	73. Lithuania	75.60
41. Latvia	71.45	53. Romania	71.94	44. Latvia	70.43	130. Latvia	58.20

Sourceo: (KOF)

Hungary is the most globalized country according to KOF (2017), followed by the Czech and Slovak Republic. These three countries are at the top twenty of the world ranking. Poland came in 25th place (slightly behind Croatia). These five countries reached over 80 points. They are followed by Estonia (also in the third "10"), Lithuania, Slovenia, Bulgaria and Romania (32-25). The lowest position in this group of countries was taken by Latvia (41). The difference between the most and the least globalized country is 15.1 points.

Hungary is also ranked first in the economic globalization. Estonia was second, much better than in the overall ranking. These two countries from first "10" are followed by the Slovak and Czech Republic (12-13), and Latvia (21). These countries gained over 80 points. Poland was only on 39th place. The worst in this ranking – with 72 points only – was

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[21] Detailed information on the methodology for calculating the index see: (KOF).

[22] It is well-regarded in the literature on the advantages and disadvantages of globalization measurment (Caselli, 2008; Zagóra-Jonszta, 2017).

Romania (16.81 points less comparing to Hungary). In ranking of social globalization Croatia took first place. This certainly contributed to its high position in the overall index of globalization. Lithuania was also better than in other rankings. Poland is on the 6th place. The EU-11 countries are not at the top, but occupy relatively high positions and are close to each other (from 15th to 44th.). The difference between the most and the least globalized country is 14.86 points. More diverse – compared to the earlier sub-indices is the ranking of political globalization. Hungary is again the most globalized country (over 90 points). Romania is second, Poland – third (the best position). Much further is the Czech Republic and Slovakia. The EU-11 countries occupy in this ranking the lowest places. The highest ranked Hungary is on the 23rd position, Romania on the 28th and Poland on 33rd. Four more countries are ranked in the fifth ten. The remaining countries are much further. At the end there are the Baltic States. The last Latvia was only on 130th position with 32.74 points less than Hungary (the biggest difference).

3. The changes in the level of globalization in the UE-11 countries

The KOF provides the information that allows us to identify the changes that have taken place in the level of globalization in EU-11 since the 1990s. It is shown in Table 2.

Table 2: KOF Index of Globalization 1990-2017 (UE-11)

Country	1990*	1995	2000	2005	2010	2017
Bulgaria	38.34	54.15	63.72	67.32	71.4	76.89
Czech Rep.	65.77	70.83	78.49	84.07	84.27	84.88
Estonia	42.56	61.96	72.48	76.6	78.82	79.27
Croatia	39.64	42.73	62.57	73.23	75.53	81.39
Hungary	58.82	75.13	81.07	85.48	87.07	86.55
Lithuania	35.17	49.1	62.51	70.19	72.06	77.47
Latvia	37.18	48.23	57.22	67.42	69.33	71.45
Poland	49.24	66.69	72.51	78.51	80.1	81.32
Romania	34.13	50.98	62.07	67.13	73.62	76.51
Slovak Rep.	56.85	63.83	74.29	82.9	84.75	84.36
Slovenia	38.44	51.35	66.24	75.19	76.87	76.91

*Estonia, Croatia and Slovenia – 1991, Czech Rep. and Slovak Rep. – 1993.

Source: (KOF)

The increase in the level of globalization took place in all the countries. In the period 1995-2017 (data from the years 1990-1994 are not fully available) the index increased most in Croatia: by almost 40 points, next in Lithuania (by about 28 p.), Bulgaria, Slovenia and Romania (by 25 p.). Lower increase was in Latvia and Slovakia (above 20 p.) and the lowest (below 20 p.) in Estonia, Poland, the Czech Republic and Hungary (by about 14,5 p.)[23]. In terms of percentage points the biggest leap was made also in Croatia (90%) and Lithuania (almost 60%), next in Romania, Slovenia, Latvia (about 50%) and Bulgaria (42%). The changes in other countries were smaller (15-20%). The largest changes were recorded by countries with a low level of globalization in the base year, and the lowest in the most globalized ones. As a result, the differences between them decreased. If in 1995 the difference between the most and the least globalized was 32.4 p., it dropped to 23.85 p. in 2000, 23.41 in

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[23] Such changes, with the exception of Cyprus (increase by 30 points) and Malta (increase by 15 points), were not recorded by other EU countries (KOF)

2005, 17.74 in 2010 and 15.1 p. in 2017. The convergence in the levels of globalization is evident.

The largest changes occurred in the first transition period (1990-1995). Although the data for this period are not fully comparable, one can notice a significant increase in the KOF globalization index. The largest, and in a shorter period, was recorded by Estonia (by 19.4 p.). Only a slightly lower leap was recorded by Poland and Hungary (these two countries decided on a shock transformation too). Romania and Bulgaria, which in the initial period chose this type of transition, were also among the leaders. The globalization index in Croatia only increased slightly (which can be explained by the war in the Balkans), as well as in the Czech Republic and Slovakia (in these countries in shorter period). In the second half of the 1990s the largest increase (by 20 p.) was recorded by Croatia and Slovenia. Lower growth was recorded by Bulgaria and Romania (slowdown of the transition process), and above all Poland and Hungary (increase by 6 p.). The first years of the 21st century are the period of completion of the necessary adaptation processes to the requirements of the EU membership, and at the same time the end of systemic transformation for most countries. In the years 2000-2005, the level of globalization was growing in all the countries. These changes are not so large, and there are no such huge differences between the EU-11 countries. The largest increase (by about 10 p.) occurred in Croatia (further catching up) and Latvia (a smaller increase in the index of globalization in previous years). The smallest increase (by about 4 p.) was recorded by Bulgaria, Estonia and Hungary. Even smaller increase in the globalization index took place in 2005-2010. For most countries this was an increase of about 2 p. The exception was Bulgaria (increase by 4 p.) and Romania (increase by 6.5 p.), these are two countries that joined the EU later. The second decade of the 21st century recorded a further slowdown in the rate of globalization growth in the analyzed group of countries. A slight decrease was recorded in Hungary and Slovakia, increase was recorded in Slovenia, Estonia, the Czech Republic (below 1 p.) and Poland (slightly above 1 p.). The globalization index increased the most in Croatia (by around 6 p.), Bulgaria (by about 5.5 p.) and Romania (by about 3 p.).

4. The reasons of differentiation in the level of globalization in the UE-11

Globalization is certainly one of the major socio-economic processes of recent decades, but for the CEE countries there are two more: systemic transformation and economic integration.

The systemic transformation that began in this group of countries in the early 1990s was the main factor that contributed to the increase in the their level of globalization. It enabled the exit from a closed block, the exit to the world, which contributed to the growth of international trade, foreign direct investment, indirect investments, etc. It was previously limited or even impossible from political reasons. These indicators, as well as the level of restrictions (which was also limited) in international exchange, are used to calculate the economic degree of the globalization dimension. It was also influenced by the increase of international personal contacts (mainly tourism development), information flow and cultural proximity, which determines the level of social globalization. It also increased the number of connections with other countries, participation in international organizations, concluded

international treaties, and thus also had an impact on its political dimension[24]. As a result, the globalization index of the countries that joined the process increased significantly.

However, the process of systemic transformation in this group of countries varied. Hence the differences in the level of globalization. In countries that did it radically, the globalization index grew faster. The countries that were successful in implementing the systemic transformation (Hungary, the Czech Republic, Slovakia, Poland, and Estonia) soon achieved a relatively high level of globalization and maintained a high position in the globalization ranking. The countries of "late transformation" (Bulgaria, Romania, Croatia) had a low level of globalization at the starting point, were catching up with the leaders for a long time and mostly still have a lower degree of globalization[25].

It is worth adding that the countries of CEE outside the EU-11 are in most cases countries of "late" or even still "unfinished" transformation. They had a low level of globalization at the starting point for systemic transformation. Despite the very rapid increase in the level of globalization, they are still lagging behind the EU-11 countries. In the 2017 KOF Index Globalization ranking none of them is ahead of any EU Member State (KOF).

Economic integration has strengthened globalization. "The four EU freedoms" have undoubtedly contributed to increased flows of goods, services, capital and people. The common market played an important role here. The economic aspect of globalization has been increased, as well as the social (through personal contacts) and political (the position of these countries in the world) increase. The processes caused by systemic transformation intensified. It is true that after the accession to the EU, the rate of growth in the level of globalization has been slowed down, but it must be remembered that the liberalization of international exchange appeared already in the pre-accession period well before joining the EU. There were no major changes immediately after the accession. Therefore, we cannot say that integration with the EU has inhibited the globalization process in these countries.

The relationship between integration and globalization is obvious. The most globalized countries entered the EU first. Countries with a lower globalization level joined the EU in subsequent enlargements. The countries with the lowest globalization remain outside the EU (as candidates or associated with the EU). This can be seen by analyzing the KOF data.

Increasing the level of globalization was undoubtedly a consequence of these two processes (systemic transformation and economic integration) that occurred together. The systemic transformation in these countries had a dual character. It was a transition to a market economy in general, but also to the requirements of the market economy in which the EU functions. These two transformations were strongly conjugated and mutually conditioned. Therefore, the impact of these processes on the globalization of this countries cannot be considered separately.

The influence of other factors on diversification of the globalization of EU-11 countries was also examined. They are: the number of the country's population, its area and GDP per capita. It was analyzed by regressing KOF Index of Globalization (2017) as dependent variable against the above mentioned factors as independent variables. Regression functions

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[24] These are the main indicators used to calculate the level of globalization for most indexes, including KOF.

[25] This division is based on indicators of the progress of market reforms developed by EBRD (EBRD).

(y) and coefficient of determination (R^2) for these relationships in 2017, both for the general globalization index and the economic globalization index, are included in Table 3.

The above results show, that there is no correlation between them or it is rather small. In general, the relationship between them is greater in the case of the index of economic globalization than the overall index of globalization. As far as the area is concerned, there is no correlation between them at all. The relationship between population and the level of globalization is in line with expectations only in the case of economic globalization (rather low). It means, that small and medium-sized countries do not have to be more open and globalized compared to large ones. The greatest dependency exist between GDP per capita and the level of globalization. This is especially true for economic globalization.

Table 3: Regression functions (y) and coefficient of determination (R^2)

Area of the country and index of globalization	y = 0.0011x +79.52	-0.00	R^2 = 0.0005	0.00
Area of the country and index of economic globalization	y = -0.0289x + 83.706	-0.02	R^2 = 0.1881	0.35
Population and index of globalization	y = 0.0904x +78.787	-0.01	R^2 = 0.0468	0.01
Population and index of economic globalization	y = -0.1598x +82.2295	-0.15	R^2 = 0.0846	0.36
GDP per capita and index of globalization	y = 0.1309x +70.651	0.02	R^2 = 0.1108	0.06
GDP per capita and index of economic globalization	y = 0.2688x + 62.289	0.08	R^2 = 0.2696	0.27

Source: (own calculation based on (KOF) and https://europa.eu/european-union/about-eu/figures/living_pl)

The impact of globalization on the economic growth of EU-11 countries in the years 1995-2017 was also examined. It was analyzed by regressing the percentage change in GDP per capita in PPS as dependent variable against the percentage changes in KOF Index of Globalization as independent variables in the analyzed period. Estimated regression function was y = 0.6893x + 33.927 (R^2 = 0.1535). It means, that the thesis about the positive impact of globalization on economic growth in case of EU-11 countries was positively verified[26].

5. Conclusion

Studies on the globalization of EU-11 countries allow to draw the following conclusions. Starting from the 1990s, the level of globalization of this group of countries has increased significantly. The largest increase took place in countries where the level of globalization at the starting point was the lowest, and the lowest in the most globalized countries. As a result, the differences between individual countries have significantly diminished. So we can see the convergence also in the sphere of globalization. The increase in the degree of globalization varied throughout the sub-periods. The current level of globalization of these countries is the result of the combined action of both systemic transformation and the process of integration with the EU. The research did not confirm the influence of the country's area and population to the level of globalization. There is no correlation between them. A very small negative correlation occurs only in the case of economic globalization. Greater dependence, especially in the case of economic globalization, exists between GDP per capita and the degree of globalization. The positive impact of globalization on economic growth was also noted.

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[26] Correlation between them is positive and high. The exception is Croatia (big change in the level of globalization and small in the growth of GDP) and Estonia (vice versa). It can be explained by the participation in the Balkan war (Croatia) and relatively high level of globalization at the starting point (Estonia).

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THE ECONOMIC KNOWLEDGE OF THE YOUNG GENERATION OF VISEGRAD GROUP COUNTRIES - A SOCIOLOGICAL ANALYSIS

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Abstract. The reality of modern labour market challenges the university graduates. Competence, expertise, experience, activity and flexibility are very relevant. It is hard to imagine sustainable development without economies and societies based on knowledge, especially economic knowledge. The paper is based on the results of the research that was conducted in 2015 and 2016 amongst university students of Visegrad Group countries within the project entitled 'The economic awareness of the young generation of Visegrad countries'. The empirical research was conducted at 4 universities in V4 countries, namely in Poland (Katowice), in the Czech Republic (Olomouc and Ostrava), Slovakia (Nitra) and Hungary (Godollo). The theoretical part is based on the concept of economic awareness, in which economic knowledge is one of the elements. Several questions from a comprehensive questionnaire, which concerns every element of economic awareness, will be empirically analysed. There are questions about economic knowledge and phenomena in the global economy. The following questions will be answered: What is the knowledge about economic concepts amongst the young generation of V4 countries? What do students know about phenomenon of global economy? as well as Which structural factors influence the diversity of this knowledge (nationality, course of study)? These questions shall be provided with answers.

Keywords: economic knowledge, young generation, Visegrad Group countries, sociological analysis

JEL Classification: I20, I23, F60

1. Introduction

All human beings, as participants in social life, must possess economic knowledge. It is necessary for their daily functioning and the management of their or their family's money. Therefore, their everyday decisions made in a microscale have a certain economic impact. Usually, however, people are equipped with such knowledge through their daily socialisation (Houtenville & Conway, 2008). On the other hand, a bigger problem concerns the economic knowledge related to bank transactions and financial settlements. Despite the fact that these problems concern the majority of the population, not everybody is knowledgeable and competent enough to move freely in the world of economic concepts. An even more difficult problem is posed by orientation in such economic issues as the global economic crisis, the globalisation scale, the role of corporations, and factors determining economic inequalities. An essential role in diagnosing this process is played by sociological research exploring one

of the components of economic awareness, economic knowledge. This is particularly true of the young generation, who are usually the pioneers of social changes. The purpose of the paper is to:

- diagnose the economic knowledge amongst the students of V4 countries with regard to economic concepts;
- diagnose the knowledge about the processes occurring in the global economy;
- diagnose which structural factors (nationality, field of study) affect the students' economic knowledge.

2. Theoretical part of the study – economic knowledge as an element of economic awareness

A theoretical analysis of the concept of economic knowledge must be placed within a broader context of economic awareness. Economic awareness is one of the elements of economic culture. This approach is useful in sociological studies, where the concept of awareness plays a significant role. This concept will be defined below because it includes a narrower concept of economic knowledge. It is a way of thinking and the attitude of man to economic reality. The economic awareness should include such elements as economic knowledge, value system and economic aspirations, work and entrepreneurship, the attitude towards wealth and poverty, the attitude towards money and thriftiness, and consumption. (Swadzba, 2017) One of its elements is the economic knowledge. There are several levels that can be distinguished within the concept of economic knowledge. The first level includes colloquial knowledge which is necessary for people's daily functioning and the management of their or their family's money. Each decision concerning the purchase of everyday products or larger investment decisions in a household require knowledge of a particular product's price and quality. This knowledge is acquired through primary and secondary socialisation (Roland-Levy, 2004). The second level encompasses specialist knowledge that concerns everyday functioning. This knowledge pertains to the principles of functioning on the labour market, entrepreneurship, saving, insurance, the demand and supply criteria, the understanding of financial operations (Kalthoff, 2004; Swadźba, 2016; Rantanen & Toikko, 2017). This type of knowledge is not accessible to and not always comprehensible for the grassroots, even though many people have to face such problems in their everyday life. The average consumer finds it difficult to make decisions about opening a bank account, which bank to choose and how to deposit the savings, which insurer to choose as well as what kind of credit to take. The diverse offer does not always make it possible to have a good grasp of the advantages and disadvantages. Such knowledge is not always gained through socialisation and it must be supplemented during our lives in order to acquire specific competences. The third level is made up of knowledge that concerns general economic processes. It applies to the functioning of economy as a whole and its particular segments, in the regional, national and global dimension. It also concerns the functioning of corporations and their influence on national economies. The knowledge also concerns the globalisation processes occurring in today's world. They involve the understanding of increasingly closer relationships between science and technology, the market and politics, the society and culture, as well as of ecology. As a result, the global level is gaining importance in terms of quality (Morawski, 2004; Morrison & Custano, 2015; Mukherjee, 2016). The increasingly closer relationships are conducive to the consolidation of the world which has a number of relatively independent

dimensions, i.e. the economy, politics and culture. This is changing the contemporary economic system and the social relations present in it (Caruso, 2016). The economic knowledge included in the aforementioned levels is one of the elements of knowledge-based economy (Horakova & Jaluvkova, 2018). This is because it demonstrates the civilisational competences, a lack of which may exclude an individual from social life. However, not everybody has such knowledge, particularly if they finish their educational career at the basic vocational or secondary level. Students, who will one day become the social elite, should possess economic knowledge, especially because they were growing up in the age of the free market, the entrance of their countries' economies into the EU economy, where they could notice its positive effects on the improvement of the living standard (Rekker, 2018). A significant role in this regard is played by study curricula and the system of higher education that should transfer such knowledge during the studies (Schumilov, 2003; Babones, 2010; Moiso & Kangas, 2016). Therefore, the project entitled "The economic awareness of the young generation of Visegrad Countries" analysed the economic knowledge of students in terms of the 2nd and 3rd levels discussed.

3. Methods

The empirical analysis is based on the research was conducted in April–May 2015 and November 2016, in four V4 countries – Katowice, Poland (the University of Economics in Katowice, the University of Silesia in Katowice and the Silesian University of Technology), Olomouc and Ostrava, Czech Republic (the Palacky University in Olomouc, the University of Ostrava and the Technical University of Ostrava), Nitra, Slovakia (the Constantine the Philosopher University in Nitra and the Slovak University of Agriculture in Nitra), Godollo, Hungary (the Szent Istvan University in Godollo)[27]. Firstly, a common questionnaire survey was prepared in English and then it was translated into national languages. The questionnaire included 37 extended questions (all the elements of economic awareness) and 10 questions about sociodemographic characteristics. In each of the countries, groups of students were selected to take part in the research using an auditor survey technique. The research was based on the first and second level students from four different types of studies: economics and management, technical, sciences or medical, social studies, humanities. In Poland, 400 surveys were conducted, in the Czech Republic – 400, in Slovakia – 387, and in Hungary – 368. Jointly, 1,555 surveys from four V4 countries were obtained and directed for further analysis. The article will focus only on answers to questions about economic knowledge. The analysis has been answered in two questions. The first question was as follows: "Assign the following concepts to the relevant definitions". Definitions of the following concepts were provided: 1. Mortgages, 2. Fixed deposits, 3. PIT, 4. Accounts, 5. Bonds, 6. Demand, 7. Supply. The students' task was to assign relevant definitions to the concepts provided: The second question was: "Below there are several statements on the global economy. Please also refer to them". There were sentences related to the process of globalisation. The first three concerned the negative consequences of globalisation: S.1. The various national governments have fewer tools to run their own economy, S.2. Global corporations force individual

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countries to make certain economic decisions, S.3. Global corporations are a threat to economic and financial stability. The fourth statement reflected the positive aspects of globalisation: S.4. Globalization contributes to reducing economic inequality between people. The students were requested to choose such answers as "definitely yes", "rather yes", "rather no", "definitely no", "hard to say". The results will be presented in the tables (as percentage data) and correlations with Chi-square and Cramer's V.

4. Results and discussion

The first question under analysis concerned knowledge about certain economic concepts related to market functioning. These concepts are present in the everyday life so an educated person should understand how to apply them. As mentioned before, the students were provided with definitions to be assigned to the particular concepts. The concepts were as follows: 1. Mortgages, 2. Fixed deposits, 3. PIT, 4. Accounts, 5. Bonds, 6. Demand, 7. Supply. Below, there are the results of correct responses.

Table 1: Answers about economic questions (%)

Answers	Correct answers								
	7	**6**	**5**	**4**	**3**	**2**	**1**	**0**	**Total**
Poles (N = 400)	**88.0**	**0.8**	**7.5**	**1.8**	**0.5**	**0.8**	**0.5**	**0.3**	**100.0**
Czechs (N = 400)	**26.5**	**1.0**	**32.0**	**13.8**	**10.5**	**6.0**	**3.0**	**7.2**	**100.0**
Slovaks (N = 387)	0.0	0.0	3.9	8.3	24.5	25.8	26.1	11.4	100.0
Hungarians (N = 368)	78.6	2.2	12.4	1.9	1.6	3.0	0.3	0.0	100.0

Source: (Team research, own calculation)

The research results are surprising. The students of the two countries under analysis, namely Poland and Hungary, demonstrate extensive knowledge of economic concepts (7 correct answers; Poles – 88.0%, Hungarians – 78.6%). The students from the remaining two countries, namely Slovakia and the Czech Republic, achieved much lower results. Most of the Slovakian students chose 3, 2 or 1 concept correctly (in total, 76.4% of the responses). On the other hand, the choices of the Czech students are better and more evenly spread (nearly 60% of them made from 7 to 5 correct choices). How can such responses be explained? In the case of the Hungarians, such results are not a surprise since the Hungarian survey sample was overrepresented by students of economy and management. On the other hand, such good knowledge of economic concepts amongst the Polish students, with approximately ¼ of the students from each of the study fields, was a positive surprise. However, due to the fact that the research was conducted in a very reliable manner, there is no chance for errors to have occurred. It is, however, difficult to explain results in the correct choices of economic concepts amongst the Slovakian students. The survey sample contained more first-year students, which might partially explain this situation. A large part of the Slovakian students come from villages and small towns, whereas the Polish and Hungarian students – from large cities and urbanised areas. Perhaps, the primary socialisation is not so strong or there may be a lack of proper education at school. These are questions that could be explained by an in-depth qualitative analysis. In view of the above, it would be reasonable to verify whether the field of study influences the economic knowledge that translates into the understanding of concepts. The results of the correlation between the students' responses and the field of study indicate that such a correlation exists in the responses given by the Czech and Hungarian students, yet is absent in the responses by their Polish and Slovakian counterparts (Cz: at the level of p = 0.000, the chi-squared test – significant, Cramer's V 0.216; H: at the level of p =

0.005, the chi-squared test – significant, Cramer's V 0.195; P: at the level of $p = 0.176$, the chi-squared test – not significant, Cramer's V 0.150; S: at the level of $p = 0.116$, the chi-squared test – not significant, Cramer's V 0.137)[28]. The highest relationship can be noticed in the responses given by the Czech students. The Czech students of economy/management were more likely to choose 7 correct answers, compared to the others (E: 46.2%, H: 28.4%, P: 19.2%, S: 16.7%)[29]. Nonetheless, these results are far from being similar to those of the Polish and Hungarian students. A certain relationship, yet not so strong, is also present amongst the Hungarian students. It was also slightly more common for the Hungarian students of economy/management to select correct concepts (E: 80.1%, P: 77.8%, S: 73.4%, H: 58.8%). The lack of correlation in the responses given by the Polish students is due to the fact that nearly all of them achieved a high correctness rate of the answers, with the students of economy/management scoring even higher (91.6% provided 7 correct answers). On the other hand, only 2.5% of the Slovakian students of economy/management provided 5 correct answers (P: 8.2%, S: 4.4%, H: 0.0%). Based on the survey results, a conclusion can be drawn that the economic knowledge of the students of economy/management is usually higher than in the case of students from the remaining fields of study. This also results from other research (Schumilov, 2003). The next question included 5 statements concerning global economy. The students' task was to take a stance on them and select one of the answers. Below, you will find the results:

Table 2: Below there are several statements on the global economy. Please also refer to them:

Answers	Definitely yes	Rather yes	Rather not	Definitely not	Hard to say	Total
The various national governments have fewer tools to run their own economy						
Poles (N = 400)	6.0	43.3	28.2	8.3	14.2	100.0
Czechs (N = 400)	5.0	44.5	29.5	4.5	16.5	100.0
Slovaks (N = 387)	14.7	39.5	20.2	4.4	21.2	100.0
Hungarians (N = 368)	6.8	45.0	29.7	7.9	10.6	100.0
Global corporations force individual countries to make certain economic decisions						
Poles	18.3	59.3	12.0	0.8	9.8	100.0
Czechs	14.8	60.0	14.0	0.5	10.8	100.0
Slovaks	43.4	46.3	4.1	0.5	5.7	100.0
Hungarians	42.5	43.3	10.4	0.3	3.5	100.0
Global corporations are a threat to economic and financial stability						
Poles	10.3	31.5	38.3	3.8	16.3	100.0
Czechs	8.0	32.8	37.0	4.8	17.5	100.0
Slovaks	17.3	37.0	26.4	3.1	16.3	100.0
Hungarians	16.1	41.0	29.8	7.7	5.5	100.0
Globalization contributes to reducing economic inequality between people						
Poles	7.5	32.3	29.8	19.0	11.5	100.0
Czechs	4.5	37.8	35.3	10.0	12.6	100.0
Slovaks	8.0	27.6	31.3	18.6	14.5	100.0
Hungarians	9.3	30.2	29.7	21.8	9.0	100.0

Source: (Team research, own calculation)

The statement above involved taking a stance on the events and activities related to global economy. The analysis of the students' responses to these statements provides us with

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[28] P – Poles, Cz – Czechs, S – Slovaks, H – Hungarians.

[29] P – technical, sciences, E – economics and management, S – social, H – humanities.

information on the knowledge and opinion that the young generation have with regard to the global economy. Most of the students took a stance on the statement presented and only several percent of them answered: "Hard to say". The answers were most frequently focused on the following options: "Rather yes" and "Rather not". It can therefore be concluded that the students have a good grasp of the phenomena related to globalisation and try to express their opinion on them. Below, there are the selection results for the particular statements.

The first statement, namely "The various national governments have fewer tools to run their own economy" definitely appealed to a small proportion of the Polish, Czech and Hungarian students (from 5.0% to 6.7%). Around a few percent of students did not agree. Approximately half of the students responded: "Rather yes", while nearly 30%: "Rather not". An exception is the Slovakian students who are more polarised in their responses. A larger proportion of them, compared to the other students, agree with this statement (14.7%), yet a smaller proportion answer "Rather not" (20.2%). There is also a relatively high proportion of "Hard to say" responses (21.2%).

The second statement, namely "Global corporations force individual countries to make certain economic decisions" was more widely accepted amongst the students. The vast majority of the V4 students approved of the statement (the total percentage of "Definitely yes" and "Rather yes" responses – P: 77.6%, Cz: 74.8%, S: 89.7%, H: 85.8%). Definite agreement with this statement was expressed by nearly half of the Slovakian and Hungarian students (S: 43.4%, H: 42.5%). Low proportions of the students did not agree with the statement above. It can therefore be assumed that the students have a clear-cut opinion on the impact of corporations on the economic life of the particular countries. Smaller countries and their economies have less opportunity to oppose large corporations and this could be reason why the Slovaks and Hungarians were more likely to accept the statement.

The responses to the third statement, namely "Global corporations are a threat to economic and financial stability" provided diverse results. Approximately 16-17% of the Polish, Czech and Slovakian students had no opinion on this subject, with the same being true of only 5.5% of the Hungarian students. The remaining part of the Polish and Czech students were divided in half as far as their opinions were concerned (the total percentage of "Definitely yes" and "Rather yes" responses – P: 41.8%, Cz: 40.8%). On the other hand, the statement was confirmed by a larger proportion of Slovakian and Hungarian students (S: 54.3%, H: 57.1%).

The fourth statement indicates the positive aspects of globalisation, namely: "Globalisation contributes to reducing economic inequality between people". However, the majority of the V4 students are not convinced of this statement. Several percent of the Polish, Czech and Slovakian students abstained from answering (only 9.0% of the Hungarian students). Approximately half of the remaining ones are against this statement (the total percentage of "Definitely not" and "Rather not" responses – P: 48.8%, Cz: 45.3%, S: 49.9%, H: 51.1%). Only 4.5% (Cz) to 9.3% (H) of the students agreed with this statement.

The question still is whether studying economy/management influences the knowledge about the global economy. Due to the limitations of space, only a brief review of the results will be presented. Chi-squared tests generally do not show any correlations in the responses given by the Polish and Slovakian students. However, such relationships can be found in the percentage results. They demonstrate correlations in 3 responses to the statements given by the Hungarian and, in particular, the Czech students (S.1. Cz: at the level of $p = 0.000$, the chi-squared test – significant, Cramer's V 0.177; H: at the level of $p = 0.005$, the chi-squared

test – significant, Cramer's V 0.160; S.3. Cz: at the level of p = 0.000, the chi-squared test – significant, Cramer's V 0.198; H: at the level of p = 0.002, the chi-squared test –significant, Cramer's V 0.167; S.4. Cz: at the level of p = 0.000, the chi-squared test – significant, Cramer's V 0.215; H: at the level of p = 0.009, the chi-squared test – significant, Cramer's V 0.155). It can therefore be concluded that economic studies influence the understanding of the processes within the global economy.

5. Conclusion

Economic knowledge is very important in the process of social development. Knowledge about basic economic concepts and the phenomena occurring in the economy helps to better function in this realm and understand the mechanisms of its operation. The young generation, i.e. the students, as the future elite, should possess such knowledge. The research conducted made it possible to fulfil the objectives assumed.

Firstly, the research results demonstrated that the students differed in terms of their knowledge about economic concepts, with the greatest knowledge being manifested by the Polish students, from all fields of study. The knowledge in this regard amongst the Hungarian students is also high. Studying economy and management influences the understanding of economic concepts. Most of the students of economy/management are capable of distinguishing and assigning them. Such knowledge will certainly make their daily life easier, because the ability to function on the financial market is of crucial importance.

Secondly, the research demonstrated that most of the students manifest their interest in the issues of global economy and are able to express their opinion in this regard. The opinions concerning the global economy more often manifest a threat to the economic order and anxiety that the national governments have fewer and fewer tools to manage their own economies. In particular, the last threats are more often expressed by the students from smaller countries (Slovakia and Hungary). A characteristic feature of the students of economy/management is that they are less concerned in their answers about the negative consequences of globalisation compared to the other students, and more likely to indicate its positive effects. Their economic knowledge helps them to acquire broader understanding of the world's processes.

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SHELTERED WORKSHOPS AS ONE OF THE METHODS OF PREVENTING GLOBAL SOCIAL EXCLUSION OF THE DISABLED

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Abstract. Global estimated data shows constant increase of the phenomenon of disability over time, which is a result of demographic conditions connected with aging of societies in their working age, improvement of life expectancy, decrease of the percentage of children and youth in populations. Therefore, the main task of public policies in countries of the European Union in such a situation is prevention of social exclusion of this sub-population. The supporting actions include many levels of functioning of the disabled in the community, but at the moment employment is considered internationally as the most important component of the inclusion processes. For many years, sheltered workshops have been playing rehabilitation and employment roles for most professionally active disabled people worldwide. The author of this study has made an attempt to analyse the working situation of partially disabled employees in sheltered workshops in Poland, in particular the Silesian province where most of the people are centred in our country, in comparison with the other member countries of the European Union. In the research, the author showed the main obstacles for employment in the closed Polish labour market. In order to achieve the above-mentioned objectives the author made use of statistics coming from both secondary sources and her own research, which was conducted among Polish employees of the protected labour market.

Keywords: disability, protected labour market

JEL Classification: K33, J08, J38, K39, J68

1. Introduction

Contemporary characteristics of disability result, to a large extent, from adoption by most of the countries in the world of the interactive model which, except for endogenous barriers, also points to exogenous barriers preventing a disabled individual from proper functioning (Roessler & Drake, 2017). The assumptions of the modern approach towards the issue of disability can be found in the concept of the International Classification of Functioning, Disability and Health (ICF), as well as the European survey monitoring the health conditions of the Europeans (EHIS), according to which disability is understood as limitation in performing basic activities lasting more than 6 months. Recent studies using this definition reveal that 17,6% of the European Union (EU) population have been affected with some kind of disability. The highest percentage of people with disabilities was reported in Hungary, Lithuania, Latvia (above 20%), while the lowest – in France, the Czech Republic and Italy (slightly below 15%). Poland, on the other hand, has a share of people with body dysfunctions

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very similar to the average share in the whole EU (17,7%) (Antczak et.al., 2018). Long-lasting, increasing disability together with low level of education often enough become the factors leading to marginalization and social exclusion of this sub-population due to the difficulties with taking up and maintaining employment (Pawlowska-Cyprysiak et.al., 2013). With regard to the above, the issues of social inclusion and combating poverty of the groups defavourised on the labour market have been the subject of debates at the EU forum for many years. Those issues have also found their place, among others, in Strategy 2020 (Europe 2020…, 2010), however the main statistical indicators already show that the strategic goals will not be achieved within the set deadline (Stec & Grzebyk, 2018). The employment rate of the disabled in the EU is barely 47,3%. Nonetheless, there are countries such as Hungary, Ireland, Bulgaria and Poland where this rate fluctuates around 30% (Employment…, 2011).

Further part of this study will deal with a short analysis of the source literature regarding the European strategy towards disability, with particular focus on the role of sheltered employment, as well as with a presentation of the results of questionnaires distributed among the employers on the sheltered labour market in Poland as a case study of a country with one of the lowest employment rates of the disabled, in order to distinct the main barriers for social and professional inclusion of people with disabilities in this country.

2. EU disability policy

The EU institutions have been dealing with the topic of social inclusion for over 30 years. However, the aid efforts undertaken by the Community in the initial period were typical for nanny state and medical approach functioning at that time, thus concentrating solely around financial security and hospital and medical services. High costs of such undertakings as well as lack of perspectives for full social reintegration forced the EU to change the scope and manner of helping people with disabilities (Swietlik, 2017). Strong influence over the shape of current EU policy was also exerted by international organizations that more and more clearly pointed to the participation of disabled people in the labour market as a remedy to both the high costs of social welfare activities and the increasing exclusion in this social group. Ratification by the EU authorities of the United Nations (UN) Convention on the rights of persons with disabilities as well as gradual emphasis on adopting its provisions by the member states as part of principle of cohesion significantly strengthened the situation of people with disabilities across all the areas of social functioning, creating appropriate conditions for running non-discriminatory employment programs (Aucante & Baudot, 2018; Aguilar, 2017). However, it needs to be pointed out that presently there are still EU countries such as Estonia, Latvia or Lithuania, where protection of citizen rights of people with disabilities is at very low level or such countries, where the dominant manner of eliminating the exclusion phenomenon mostly consists in rehabilitation activities (the Czech Republic, Poland, Slovakia, and Hungary). On the other hand, Scandinavian countries have for many years been the undeniable benchmark of inclusion activities and the practices of those countries should be utilized by other states being part of the European Community. (Tschanz & Staub, 2017; Kuznetsova et.al., 2017, Geiger et.al., 2017). However, at present moment, the Scandinavian model of the employment support policy based on anti-discrimination law and jobs creation, not providing for sanctions for discrimination in employment, could not bring the expected results in the East-Central Europe countries due to different conditioning of social and cultural reception of disability.

2.1 Sheltered employment in the EU

According to the EU guidelines an open labour market is the target place of employment for people with disabilities, while enabling gainful employment, professional development or education has been recognized as an obligation of each employer. Nonetheless, sheltered workshops, that is the ones employing at least 50% of people with disabilities unable to work on the open labour market (Commission …, 2002), in spite of being perceived in the world as centres excessively socially isolating (Boyd Thibedeau & Davis, 2016), constitute a valuable solution. The reason is that, as research shows, they enable a stable professional career path, particularly to mentally ill people who, due to their serious body dysfunctions, find it much more difficult to gain employment on the competitive labour market. (Cueto & Rodriquez, 2016; Chen et.al., 2012). What is more, over the last dozen or so years, it has been possible to observe diversification of activities conducted in sheltered workshops, which is connected with stronger pressure of some of the member states to withdraw from the typically closed and isolating form of such establishments. According to The European Association of Service Providers for Persons with Disabilities (EASPD) there are 4 basic types of employment currently functioning in the EU (Reasonable…, 2015):

- working on site in businesses related to catering, laundry or gardening services;
- delegating to other establishment or to work on the open market;
- placing in the open work environment as part of sheltered workshops therapies;
- carrying out work in small mobile units outside the workplace.

The level of organization of the rehabilitation system in a given country as well as general situation on the labour market have significant influence on the selection of the particular form of work. In the countries with high unemployment rate greater attention is paid to the gainful purpose of operation of the sheltered workshops (the Czech Republic, Bulgaria), whereas in the countries characterizing with full employment what comes to the fore is the rehabilitation purpose connected with adjusting the employee with disability to working in the employment conditions on the open labour market (Sweden, the Netherlands). However, it does not mean that in the countries with similar conditions for functioning of sheltered workshops there are the same ways of pursuing the main objectives of sheltered labour market and they cannot interpenetrate within one establishment. In some countries, such as the Great Britain, Ireland or Sweden the rehabilitation and employment objectives have been connected. On the other hand, the Netherlands and France have divided those objectives between separate administrative units. An intermediate solution, consisting in separating rehabilitation and employment establishments but at the same time subordinating them to single management have been applied in Finland and Denmark (Garbat, 2014). In Poland the rules of functioning of the sheltered labour market were regulated by the Act about social and professional rehabilitation as well as employment of persons with disabilities of August 27th, 1997 with future amendments. In accordance with this regulatory document the sheltered labour market is created from two types of subjects: sheltered workshops and cooperatives of the disabled. Over 50% of them are companies providing portering and cleaning services outside of the parent entity in facilities belonging to contractors. Thus, it can be assumed that the dominating manner of employing people with disabilities is by performing work in small teams outside of the employing entity among the able-bodied employees of the service provider and rehabilitation fulfils mostly the employment function. Nevertheless, workers with disabilities employed on the sheltered labour market can count on various types of

support, such as transport to the workplace or eliminating technical, architectural or social and employment barriers (e.g. working part-time, working remotely, support of professional assistant, adjustment of working station). In Belgium adaptation of the work station and ensuring transport to work constitute the main ways of executing the employment equality law. In Germany an equally important mean used to neutralize discrimination, except for the above-mentioned ones, is preferential treatment of people with disabilities while selecting personnel for internal trainings, as well as making it possible for such people to participate in trainings or other forms of education organized by external entities (Reasonable …, 2015). Such proceedings result directly from the EU directive 2000/78/EC and the adopted UN Convention about the rights of the disabled persons, which encourages the promotion and support of people with disabilities in the workplace. In individual countries of the EU, due to application of the principle of subsidiarity in forming legal frameworks, there are different ways of executing the EU recommendations regarding employment of people with disabilities, however the common characteristic is the willingness to eliminate the factors hindering equal access to employment. Elimination of barriers in access and maintenance must not involve the employer in incommensurate costs, therefore professional rehabilitation in sheltered workshops is a subsidized activity. Those resources in countries such as Poland, France, and Germany where a quota system exists are obtained from funds created specifically for this purpose. On the other hand, in countries such as Switzerland or Sweden, with a system functioning based on civil rights, the state is directly responsible for financing of sheltered employment (Garbat, 2014).

Sheltered workshops are mostly small and medium enterprises according to the definition featured in the EU regulation 651/2014 of June 17th, 2014. They primarily employ people whose conditions significantly prevent them from being employed in the open market. The biggest group is made up of blind or visually impaired, mentally handicapped and mentally ill persons. Such enterprises are run mostly by the entities of social economics sector (Garbat, 2014), however detailed characteristics indicating the number of such organizations in particular EU countries is impossible due to the lack of complete appropriate data (Reasonable…, 2015). Situation in Poland seems to be different, since companies with the status of a sheltered workshop are forced to competition against companies from the open sector of the market. From joining the European Union until 2016 such enterprises remained the main employment market for people with disabilities, but their number has decreased from 2463 in 2004 to 986 in 2018 (Number …, 2018).

2.2 Barriers of the sheltered labour market in Poland

In order to point out the main barriers in employment of people with disabilities on the sheltered labour market in Poland the author used part of the results of the questionnaires regarding the situation of the disabled within Silesian Voivodship, where according to the latest census from 2011, there was the biggest concentration of disabled people. From March do June 2017 39 enterprises from Silesian sheltered market out of 1020 enterprises operating in the country during that period participated in the diagnostic questionnaire. The results revealed that the biggest problem connected with running enterprises on the sheltered labour market in Poland is the necessity to compete on the national, as well as international market with companies from the open market sector (over 70% of the respondents pointed out to this barrier in running their businesses). At the same time competing is constricted because of difficulties with proper performance of workers' activities by the disabled workforce (as

many as 66,66% of employees report such kind of problems). Further impediments listed by most of the interviewees were: enhanced reporting (56,41% of indications), freezing and lowering the subsidies for remuneration of employees with disabilities (51,28% of indications).

Figure 1: Barriers connected with running the business
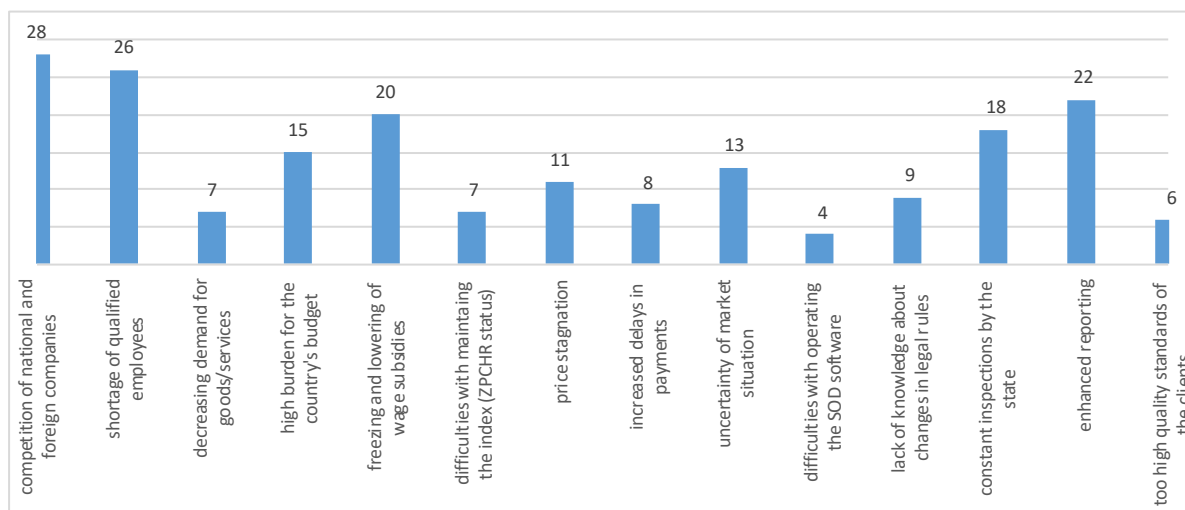
Source: (own study)

During the surveyed period the amount of wage subsidies did not fully cover the increased costs of employing people with disabilities. More than half of the respondents stated that such subsidy does not cover even 50% of those costs. Detailed breakdown of the level of covering the costs is presented in Figure 2. The Disabled Persons' Rehabilitation undo f the Enterprise (Zakładowy Fundusz Rehabilitacji Osób Niepełnosprawnych – ZFRON) is able to finance merely a small part of the disabled people's needs. The biggest number of the surveyed employers (over 30%) determined that it is between 20% and 40% of the costs of actual needs of people with disabilities (Figure 3).

Among the barriers connected with disabled employees the most significant ones turned out to be: high sickness absence and therefore increased rotation on a job position and its high maintenance costs. (Figure 4).

3. Conclusion

Sheltered employment in Europe is particularly dedicated to people with significantly limited possibilities of being employed on the open labour market, i.e.: mentally ill, mentally handicapped, and blind. According to the EU it constitutes a valuable element of inclusion activities and therefore should not be extinguished. Throughout the years it has been possible to observe global trends to gradual withdrawal from the typical closed character of such kind of enterprises to the benefit of placing people with disabilities on the open labour market within the formed mobile employment entities, as it takes place, for instance, in Poland. However, Polish sheltered workshops as one of the few in the EU, are also forced to compete on the market, nationally and internationally, with open market companies. The necessity of remaining competitive on the products and services market, as well as low level of resources

that are at their disposal, are the main factors frequently preventing them from carrying out activities in the field of social and professional rehabilitation of people with disabilities.

Figure 2: Level of coverage of employment costs by subsidies
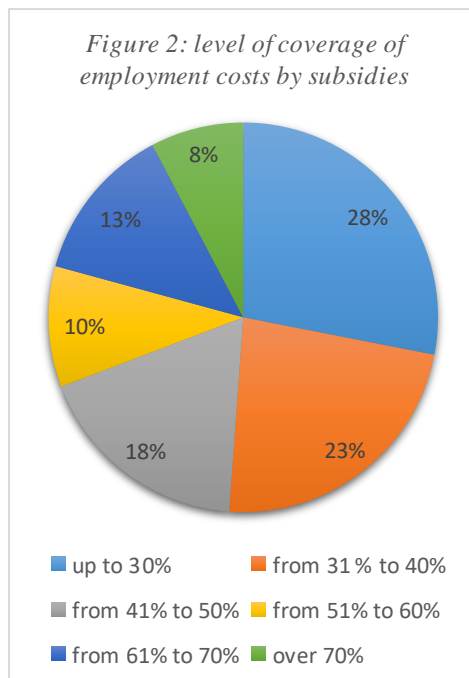
Source: (own study)

Figure 3: Level of coverage of needs as part of ZFRON
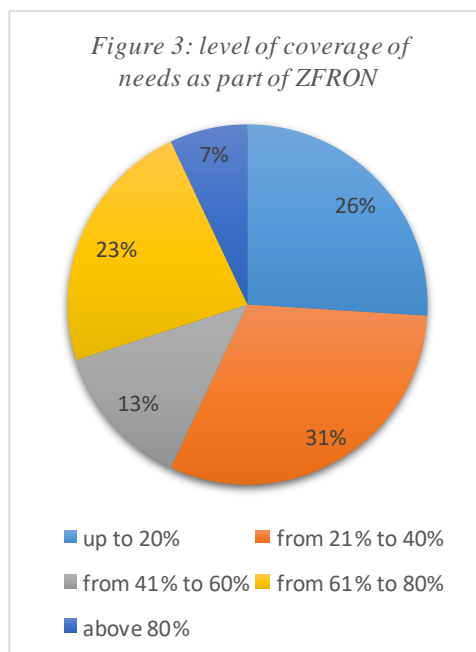
Source: (own study)

Figure 4: Barriers connected with the disabled employees

Source: (own study)

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QUALITY OF THE EDUCATION SYSTEM
VERSUS COMPETITIVENESS

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Abstract. The global economy must seek new approaches and policies in the 21st century to promote economic progress. The unification of the world market as a result of globalization trends also forces individual countries to increase their competitiveness, which is the essential basis of knowledge, education. A decisive factor of the economic growth and thus competitiveness is the availability of educated human capital and the development of its potential. Economic growth should not be the sole objective of economic policy but should contribute to people's well-being and development, so it should be human-oriented, the resources needed to increase the well-being of better education. The paper is aimed at analyzing and comparing the achieved levels of education systems of the Slovak Republic, the Czech Republic and Finland based on two OECD research studies (PISA and PIAAC). The PISA study evaluates the mathematical, reading and natural literacy of 15-year-old pupils, while the PIAAC study deals with numerical and mathematical literacy testing of 16-65 year olds and problem solving in the information technology environment. The quality of the country education system is also evaluated by the GCI index, based on its selected determinants of the 4th and 5th pillar. Information gathered could point to the effectiveness of the education system in selected countries and at the same time inform about those areas where efforts should be made to improve the education system so that young people are competitive in global labour markets.

Keywords: education, competitiveness, the PISA project, the PIAAC project, index GCI

JEL Classification: E62, I21, I23

1. Introduction

Vzhľadom k rozširujúcej sa globalizácii, vedúcej k zjednocovaniu svetového trhu, sa stala otázka konkurencieschopnosti jednotlivých krajín diskutovanou témou. Dôležitým predpokladom naštartovania konkurencieschopnej vedomostnej spoločnosti je vytváranie funkčného modelu vzdelávacej sústavy v ekonomike. Nesporným faktom ostáva, že politika vzdelávania je úzko spojená aj s dlhodobým rastovým potenciálom krajiny. (Hanushek & Woessmann, 2011)

Obsahom tohto príspevku je komparácia Slovenskej republiky, Českej republiky a Fínska z hľadiska kvality ich vzdelávacieho systému, a to na základe štúdií OECD zameraných na gramotnosť-PISA a PIAAC a vybraných determinantov 4. a 5. piliera indexu GCI. Projekt

PISA[30] sa zameriava na zisťovanie úrovne funkčnej gramotnosti pätnásťročných žiakov v oblasti čítania, matematiky a prírodných vied. Na výsledky výskumu PISA nadväzuje Program medzinárodného hodnotenia kompetencií dospelých PIAAC[31], ktorý je zameraný na mapovanie schopností a zručností dospelej populácie vo veku 16 – 65 rokov, resp. zaoberá sa testovaním čitateľskej a matematickej gramotnosti dospelých a ich schopnosťami riešiť problémy v prostredí informačných technológií. Výsledky výskumov sú tak dôležitým impulzom pre ďalšie snahy v zlepšovaní vzdelávacieho systému krajiny, aby mladí ľudia boli konkurencieschopní na globálnych trhoch práce. Pracovná kvalifikácia, vzdelanie a zručnosti sú kľúčovým článkom, ktorý je úzko spätý s úspechom jednotlivca na trhu práce a teda aj na výkonnosť národnej ekonomiky a jej úspech v globálnej súťaži. (Mateju & Vecernik, 2015)

Slovenská republika a Česká republika mali 74 rokov spoločnú históriu a za posledných 26 rokov ich samostatnosti prebehli v oboch krajinách významné zmeny, ktoré ovplyvnili aj systém vzdelávania. Či sa jednalo o pozitívne zmeny a aký je trend ich vývoja v oblasti vzdelávacej politiky možno do istej miery zistiť na základe porovnania s Fínskom, ktoré sa dlhodobo umiestňuje na špici oboch výskumov gramotnosti a jeho systém vzdelávania patrí medzi najlepšie v rámci EÚ, resp. OECD. Štúdie PISA sú cenným nástrojom krajiny pre pochopenie aspektov vzdelávacieho systému krajiny a aj keď majú svoje obmedzenia, na ktoré poukazujú napr. autori Rutkowski & Rutkovski (2016) či Klemm (2016), veríme, že zhromaždené informácie môžu poukázať na efektívnosť vzdelávacieho systému v sledovaných krajinách a zároveň informovať o tých oblastiach, v ktorých by sa malo vynaložiť úsilie na zlepšenie vzdelávacieho systému tak, aby boli mladí ľudia konkurencieschopní na globálnych trhoch práce.

Z medzinárodných štúdií OECD PISA a PIAAC vychádzali vo svojich prácach aj ďalší autori, ktorí sa zaoberajú politikou vzdelávania. Napr. ako súvisí kvalita učiteľov s výkonnosťou študentov skúmali Meroni et al. (2015), monitorovaním vedeckej gramotnosti PISA študentov v ČR a SR sa zaoberali Zahorec et al. (2013). Štúdia PIAAC sa stala základom pre výskum autorov Lindberg & Silvennoinen (2018), ktorí porovnávali čitateľskú a numerickú gramotnosti dospelých. Gustafsson (2016) zisťoval, do akej miery sa kvalita povinnej školskej dochádzky odzrkadľuje v úrovni gramotnosti dospelých.

2. Hodnotenie výsledkov žiakov na základe štúdií PISA v jednotlivých cykloch

Najlepšie výsledky vo všetkých testovaných oblastiach mali v rámci EÚ v rozpätí rokov 2003 až 2015 žiaci Fínska. Zároveň je však treba podotknúť, že v sledovanom období 2003 – 2015 kleslo hodnotenie v matematickej gramotnosti o 33 bodov, čo je najväčšia zmena (pokles) medzi vybranými krajinami (ale aj v rámci EÚ). Naopak najhorších výsledkov dosahujú vo všetkých sledovaných oblastiach gramotnosti pravidelne žiaci na Slovensku (okrem roku 2009). Slovenskí žiaci patria v sledovanej trojici krajín z hľadiska matematickej gramotnosti k najhorším a od roku 2012 dosahujú podpriemerné výsledky v porovnaní s priemerom OECD a na výkon fínskych žiakov strácajú až 36 bodov, čo je štatistický významný údaj (viď Table 1).

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[30] Programme for International Student Assessment

[31] Programme for the International Assesment of Adult Competencies

Od roku 2003 boli výsledky českých žiakov v prírodovednej oblasti a matematike nadpriemerné, avšak v oblasti čítania podpriemerné. Výsledok českých žiakov v oblasti čitateľskej gramotnosti nevybočil z priemeru. V roku 2003 patrila Česká republika do skupiny krajín s nadpriemernými výsledkami (okrem čitateľskej gramotnosti). V roku 2012 sa však ČR zaradila do skupiny jedenástich krajín OECD, ktorým sa nadpriemerný výsledok z roku 2003 za 9 rokov štatisticky významne zhoršil. V priebehu rokov 2003 až 2015 sa žiaci ČR zhoršili v matematickej gramotnosti o 24 bodov a dnes dosahujú priemerných výsledkov v porovnaní s priemerom OECD. Celkovo dosiahli českí žiaci v PISA 2015 priemerných výsledkov, avšak v oblasti prírodovednej gramotnosti sa výrazne zhoršili.

Table 1: Zmeny v období 2003 – 2015 v jednotlivých sledovaných oblastiach gramotnosti štúdií PISA

Matematická gramotnosť					
PISA	2003	2006	2009	2012	2015
Fínsko	544	548	541	519	511
ČR	516	510	493	499	492
SR	498	492	497	482	475
Ø OECD	500	496	496	494	490
Čitateľská gramotnosť					
PISA	2003	2006	2009	2012	2015
Fínsko	543	547	539	524	526
ČR	489	483	478	493	487
SR	469	466	477	463	453
Ø OECD	494	493	493	496	493
Prírodovedná gramotnosť					
PISA	2003	2006	2009	2012	2015
Fínsko	548	563	554	545	531
ČR	523	513	500	508	493
SR	495	488	490	471	461
Ø OECD	500	501	501	501	493

Source: (http://www.oecd.org/pisa/)

3. Zručnosti dospelej populácie hodnotené na základe štúdie PIAAC

Výsledky zručností dospelých v jednotlivých krajinách sú upozornením, že existuje nezanedbateľný podiel dospelých na nízkej úrovni čitateľskej a matematickej gramotnosti. V SR dosahuje až 11,6 % dospelých len najnižšiu úroveň čitateľskej gramotnosti a 13,8 % len najnižšiu úroveň matematickej gramotnosti. Na tejto úrovni dokážu ľudia riešiť úlohy len s veľmi malým počtom krokov a chápu iba malé množstvo informácií, ktoré musia byť prezentované v celkom jednoduchých súvislostiach. Veľká časť dospelého obyvateľstva nemá skúsenosti s informačnými a komunikačnými technológiami (IKT), alebo jej chýba základná

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počítačová gramotnosť potrebná na využívanie IKT v bežnom živote. SR patrí medzi krajiny s jedným s najvyšších podielov–takmer 22 %. ČR je na tom neporovnateľne lepšie–cca 10 %.

3.1 Čitateľská gramotnosť

Čitateľská gramotnosť je definovaná ako schopnosť rozumieť a vedieť používať písaný text, posúdiť jeho význam a zapájať sa prostredníctvom písaného textu do spoločenského života, dosahovať ciele a rozvíjať svoje schopnosti a osobné predpoklady.

Na najvyššej piatej úrovni čitateľskej gramotnosti sa v krajinách OECD umiestnilo v priemere 0,7 % dospelých, na Slovensku len 0,2 % dospelej populácie, v ČR 0,4 % a vo Fínsku 2,2 % dospelých. Ako možno vidieť v tabuľke 2, štvrtú úroveň dosahuje vo Fínsku až 20 % dospelej populácie, v krajinách OECD je to iba 11,1 %, v ČR 8,3 % a na Slovensku ešte menej (7,3 % dospelých). Z údajov možno takisto usúdiť, že zjavnou slabinou SR a ČR je veľmi malý podiel dospelých na 4. a 5. úrovni čitateľskej gramotnosti.

Table 2: Čitateľská gramotnosť dospelej populácie (15 – 65 rokov)

	Ø skóre v bodoch	5. úroveň 375 bod. a viac	4. úroveň 326–375 bodov	3. úroveň 276–325 bodov	2. úroveň 226–275 bodov	1. úroveň 176–225 bodov	menej ako 176 bodov
Ø OECD	268	0,7 %	11,1 %	38,2 %	33,1 %	12,2 %	3,3 %
Fínsko	288	2,2 %	20,0 %	62,9 %	26,5 %	8,0 %	1,2 %
ČR	274	0,4 %	8,3 %	41,4 %	37,5 %	10,3 %	1,5 %
SR	274	0,2 %	7,3 %	44,4 %	36,2 %	9,7 %	1,9 %

Source: (OECD, 2017)

3.2 Matematická gramotnosť

Matematická gramotnosť je definovaná ako schopnosť získať, používať, interpretovať a komunikovať matematické informácie a pojmy pri riešení matematických otázok v rôznych situáciách každodenného života.

Table 3: Matematická gramotnosť dospelej populácie (15 – 65 rokov)

	Ø skóre v bodoch	5. úroveň 375 bod. a viac	4. úroveň 326 – 375 bodov	3. úroveň 276 – 325 bodov	2. úroveň 226 – 275 bodov	1. úroveň 176 – 225 bodov	menej ako 176 bodov
Ø OECD	263	1,1 %	11,4 %	34,4 %	33,0 %	14,0 %	5,0 %
Fínsko	282	2,2 %	17,2 %	38,4 %	29,4 %	9,8 %	2,5 %
ČR	276	0,9 %	10,6 %	40,4 %	34,7 %	11,1 %	1,7 %
SR	276	0,8 %	11,8 %	41,1 %	32,2 %	10,3 %	3,5 %

Source: (OECD, 2017)

V krajinách OECD je na 2. a vyššej úrovni matematickej gramotnosti 79,9 % dospelých, vo Fínsku až 87,2, ČR 86,6 % a SR 85,9 % (viď tabuľka 3). Slovensko sa nachádza medzi celkovo 21 porovnávanými krajinami na 7. mieste zásluhou výrazne nadpriemernému podielu dospelých, ktorí sa umiestnili na 3. úrovni matematickej gramotnosti. Ak by sme však krajiny usporiadali podľa podielu dospelej populácie na 4. a 5. úrovni matematickej gramotnosti, kleslo by na priemer OECD, teda zo 7. priečky až na 11. priečku v celkovom medzinárodnom hodnotení.

3.3 Počítačová gramotnosť

Schopnosť riešiť problémy v technicky vyspelom prostredí je v štúdii PIAAC definovaná ako schopnosť používať digitálne zriadenia, komunikačné prostriedky a siete na získanie a posúdenie informácií, komunikovanie s inými a vykonávanie praktických úloh (schopnosť používať zariadenia IKT).

Table 4: Počítačová gramotnosť – schopnosť riešiť problémy v technicky vyspelom prostredí

% dospelých	ČR	Fínsko	Ø OECD	SR
odmietli výpočet založený na počítačoch a zvolili papierovú formu	12,1	9,7	9,6	12,2
neprešli základným testom počítačovej gramotnosti	2,2	5,2	4,7	2,2
s chýbajúcimi skúsenosťami s počítačom	10,3	3,5	10,0	22,0
pod 1. úrovňou (menej ako 241 bodov)	12,9	11,0	14,2	8,9
na 1. úrovni ((241 – 290 bodov)	28,8	28,9	28,7	28,8
na 2. úrovni (291 až 340 bodov)	26,5	33,2	25,7	22,8
na 3. úrovni (341 a viac bodov)	6,6	8,4	5,4	2,9

Source: (OECD, 2017)

Ako vyplýva z údajov v tabuľke 4, test schopnosti riešiť problémy v technicky vyspelom prostredí na Slovensku absolvovalo 63,6 % počítačovo gramotných respondentov. Z 36,4 % dospelej populácie, ktorá tento test neabsolvovala, 2/3 vôbec neboli schopné podrobiť sa tomuto testu. SR tak patrí ku krajinám, kde je ¼ dospelej populácie počítačovo úplne negramotná.[32]

Na 3. úrovni počítačovej gramotnosti sa na Slovensku umiestnilo iba 2,9 % dospelých, čo najmenej medzi všetkými testovanými krajinami. Priemerný podiel dospelých na tomto stupni v zúčastnených krajinách OECD je 5,4 %, v ČR je to 6,6 % a najväčší podiel obyvateľov na tejto úrovni je vo Fínsku, a to 8,4 %. Ak by sme porovnávali, koľko percent dospelej populácie dosiahlo 2. a 3. úroveň v počítačovej gramotnosti, dospeli by sme k nasledovným výsledkom: najväčší priemerný podiel obyvateľov je vo Fínsku (41,6 %), potom v ČR (33,1 %) a najmenší na Slovensku (25,7 %).

4. Kvalita vzdelávacieho systému podľa GCI

Ako už bolo vyššie uvedené, konkurencieschopnosť je neoddeliteľne spätá s kvalitou vzdelávacieho systému. Jednou z možností ako merať konkurencieschopnosť krajiny je index GCI (Global Competitiveness Index), ktorý je realizovaný Svetovým ekonomickým fórom a v súčasnosti hodnotí 148 krajín sveta. Celkový index konkurencieschopnosti je určený podľa kritérií, ktoré sú rozdelené do 12 tematických pilierov. Medzi individuálne ukazovatele, ktoré tento index združuje, a na ktoré je tento príspevok zameraný, patrí aj kvalita primárneho vzdelania (je súčasťou 4. piliera) a v rámci 5. piliera (vysokoškolské vzdelávanie a odborná príprava) aj na kvalitu systému vzdelávania.

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[32] Túto skupinu ľudí v súčasnom svete možno stotožniť so skupinou ľudí, ktorá v 50-tých rokoch 20. storočia nevedela čítať a písať, čo je bezpochyby obrovský hendikep.

Z tabuľky 5 je zrejmé, že poradie na základe GCI indexu[33] sa zhoduje s poradím na základe štúdií PISA a PIAAC. Fínsko patrí k lídrom nielen v kvalite celého vzdelávacieho systému (v rámci subindexu primárne vzdelanie obsadilo dokonca 1. priečku), ale dosahuje aj celkovú vysokú úroveň konkurencieschopnosti. Naopak SR sa nachádza zhruba v polovici rebríčka a zaujala doteraz najhoršiu pozíciu jednak z hľadiska indexu GCI, ale predovšetkým v rámci subindexu kvality vzdelávacieho systému, kde obsadilo zo 140 krajín až 121. priečku (ČR je v porovnaní so SR na tom síce lepšie, ale v tomto subindexe obsadilo až 60. priečka, čo nie je tiež príliš optimistické).

Table 5: Konkurencieschopnosť krajín podľa indexu GCI, 2015

index GCI (hodnotených 140 krajín)		Kvalita primárneho vzdelávania		Vysokoškolské vzdelávanie a odborná príprava		Kvalita vzdelávacieho systému	
	poradie	hodnota top 5,8	poradie	hodnota top 6,7	poradie	hodnota top 6,2	poradie	hodnota top 6,1
Fínsko	8.	5,5	1.	6,7	2.	6,1	4.	5,7
ČR	31.	4,7	40.	4,6	29.	5,1	60.	3,8
SR	67.	4,2	53.	4,3	53.	4,6	121.	2,8

Source: (https://www.weforum.org/reports/the-global-competitiveness-report-2016-2017-1)

5. Conclusion

Najlepšie výsledky vzdelávacieho systému podľa štúdií PISA dosahujú žiaci Fínska. Neuspokojivé výsledky dosahuje v gramotnosti z vybraných krajín predovšetkým SR, ktorá svojimi podpriemernými výsledkami obsadzuje posledné priečky v rámci krajín EÚ. Ani ČR nemôže byť spokojná, nakoľko s nadpriemernými výsledkami z roku 2003 klesla na priemer OECD.

Celkovo najlepších výsledkov na základe štúdie PIAAC dosiahli dospelí z Fínska, ktorých výsledky boli nadpriemerné vo všetkých sledovaných oblastiach. ČR dosiahla nadpriemerné výsledky v numerickej gramotnosti a priemerný výsledok v čitateľskej gramotnosti, rovnako ako aj v počítačovej gramotnosti. V čitateľskej a numerickej oblasti boli výsledky českých dospelých porovnateľné so slovenskou dospelou populáciou. V oblasti počítačovej gramotnosti boli výsledky ČR v porovnaní so SR lepšie, ale podiel dospelých, ktorí neboli ochotní, resp. schopní pracovať pri testovaní s počítačom, sa v ČR nelíšil od priemeru zúčastnených krajín a tvoril ¼ dospelých. Najslabšou stránkou SR je nepochybne celková nedostatočnosť zabezpečenia aspoň priemernej úrovne schopnosti obyvateľstva riešiť problémy v technicky vyspelom prostredí s použitím IKT a nízka schopnosť systému vzdelávania privádzať absolventov stredných a vysokých škôl na najvyššie úrovne čitateľskej a matematickej gramotnosti (to platí aj pre ČR).

IKT sa v dnešnej dobe premietajú stále vo väčšej miere do všetkých oblastí života. Príprava mladých ľudí na ovládanie IKT a ich využívanie na riešenie praktických problémov patrí spoločne s formovaním ich matematickej gramotnosti medzi základné podmienky budúceho dosahovania vyšších príjmov. Nakoľko bola dokázaná silná súvislosť medzi

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[33] Údaje sú za rok 2016, kedy bolo hodnotených 140 krajín.

úrovňou matematickej gramotnosti a dosahovanou výškou príjmov môže byť práve táto previazanosť významným argumentom v diskusii o význame vyučovania matematiky na stredných školách.

Viacej vzdelávania neznamená automaticky dosiahnutie lepších zručností. Formálne vzdelávanie má kľúčovú úlohu na rozvoj základných zručností a úroveň dosiahnutého vzdelania je v úzkej korelácii s úrovňou dosiahnutých vedomostí, zručností a kompetencií. Úspešnosť jednotlivca sa zvyšuje budovaním kompetencií aj po ukončení formálneho vzdelávania, nakoľko veľká väčšina učenia sa deje aj mimo školského prostredia. V rýchlo meniacom sa svete je preto celoživotný osobný rast (celoživotné vzdelávania) každého jedinca nutnosťou. Intenzita vzdelávania a učenia sú tak veľmi dôležité aj pre inovatívne schopnosti pracovnej sily. (Storen, 2016)

Krajina síce nemôže zmeniť minulosť, ale môže navrhnúť politiku pre poskytovanie vysoko kvalifikovaného celoživotného vzdelávania a tak napomôcť, aby si dospelí v budúcnosti udržiavali svoje zručnosti, nakoľko zručnosti dospelých majú tendenciu strácať sa, ak sa nepoužívajú. Celoživotné vzdelávanie je alfa omegou k širším vedomostiam, lepším zručnostiam a väčším kompetenciám. Takto budú dospelí ešte lepšie pripravení pre trh práce a zvýši sa ich konkurencieschopnosť a podporí sa zamestnanosť.

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GLOBAL PROBLEM OF POVERTY WITH A FOCUS ON INCOME AND MATERIAL DEPRIVATION IN SLOVAKIA

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Abstract. Poverty as a global problem is also associated with a solution to material deprivation. In connection with the membership of Slovakia in the European Union, we have adopted European legislation in this area. Currently, there is a European 2020 strategy in the countries of the European Union, in which one of the five main targets are "Combating Poverty and Social Exclusion". Target groups of the strategy are also people at the risk of material deprivation, disadvantaged job seekers, or people at risk of losing their job. Material deprivation is not only a threat to people who have problems with employment, but generally to persons who face some form of shortage in the items that their household cannot afford, because of their financial possibilities. Wages or other forms of income that represent the basic income of households may not be sufficient as an indicator of material deprivation. The relationship between income and material deprivation requires global attention in all EU countries as well as in Slovakia. The main objective of this article is to quantify the influence of selected factors on the equivalent disposable income of materially deprived and non-deprived Slovak households, their comparison and interpretation. The analysis will be based on the statistical survey on Income and Living conditions EU SILC. The effect of listed factors will be verified using the GLM procedure in SAS Enterprise Guide 5.1.

Keywords: poverty, material deprivation, equivalent disposable income, generalized linear model, EU SILC

JEL Classification: I32, C31, J31

1. Introduction

Poverty and material deprivation are concepts that are very closely related and pose a global problem. Poverty is considered as a complex phenomenon that deals with various disciplines, so there are several approaches to define it and there is no uniform definition. Most often, poverty is considered as a social phenomenon. For a person or a household to be defined, as poor, we can use this definition, a household with a shortage of resources to procure the basic types of food and to ensure the living conditions that are commonly available in society, is a standard. Poverty research is globally linked to address the issue of material deprivation. In connection with the membership of Slovakia in the European Union, we have adopted European legislation in this area. Currently, there is a Europe 2020 strategy in the countries of the European Union, one of the five headline targets being "Combating Poverty and Social Exclusion". The main priority of the strategy is to achieve growth that is

smart, sustainable and inclusive, which means more effective education and research, energy sustainability, employment growth and poverty alleviation. Slovakia is committed to implement the strategy by adopting and implementing its own national targets that take into account our specific challenges that need to be addressed. Target groups of the strategy are also people at risk of material deprivation, disadvantaged job seekers, or people at risk of losing their job. Material deprivation does not endanger only those, who have a problem with employment, but generally those, who face some form of scarcity in the monitored items that their household cannot afford given their financial possibilitie. (Nolan & Whelan, 2010; Zelinsky, 2010) In this context, it is of utmost importance that Slovakia also pay attention to the quantification of the impact of the various factors identifying the most endangered groups. It is important to recognize that in identifying the most endangered groups, it is of little importance to know, what is the situation in the group, which, on the other hand we do not consider to be endangered. The main objective of this article is to quantify the influence of selected factors on the equivalent disposable income (EDI) of materially deprived and nondeprived households, their comparison and interpretation.

The analysis will be based on the statistical survey on income and living conditions of households - EU SILC 2015. This selection survey, is carried out by the Statistical Office of the Slovak Republic regularly since 2005.

2. Assessment of the influence of selected factors on income in material deprived and nondeprived Slovak households

Material deprivation is based on a comparison of incomes and expenses of individuals or households in relation to the socio-economic position, in which they evaluate themselves against other members of society. Wages or other forms of income, that constitute the basic income of households, may not be sufficient as an indicator of poverty. Even if a household or an individual has a low income, it does not mean he is poor. If income is high, it can mean a risk of poverty, as income does not reflect how much the household spends, its commitments and it does not reflect the aspect of non-monetary poverty. It is obvious, that different households with the same income may not have the same standard of living, each with its own standard of living. Therefore, new indicators are used to measure poverty, including material deprivation. Measuring material deprivation is a non-monetary approach to measure poverty. The relationship between material deprivation and income of household is also addressed by a number of professional publications (Labudova at al., 2010; Loster & Pavelka, 2013; Rezankova & Zelinsky, 2014; Whelan & Maitre, 2014; Mysikova at al., 2015; Horemans at al., 2016; Hoynes & Patel, 2018; Soltes & Vojtkova, 2018).

Material deprivation points to the inability of an individual or household to afford the consumer goods and activities, that are typical in society at a given moment, regardless of people's preferences for these items. (Zelinsky, 2012)

2.1 Data and used methodology

One of the possibilities of measuring material deprivation is a rate of material deprivation[34]. It is defined as the proportion of individuals living in a household, who cannot afford at least 3 items out of a total of 9 deprivation items. These deprivation items are part of the financial constraint dimension and the ownership of long-term consumption items. Among the nine deprivation items, according to the EU-SILC methodology, are the following:

1. Inability to pay arrears in connection with mortgage or rent payments, energy bills and repayments of the pay-rolls or other loans.
2. Inability to afford one-week holiday outside the house.
3. Inability to allow meals, chicken, fish (or their vegetarian analogue) every other day.
4. Inability to face unexpected financial expenses.
5. The household cannot afford a phone (including a mobile phone).
6. The household cannot afford a colour TV.
7. The household cannot afford a washing machine.
8. The house cannot afford a car.
9. Inability to maintain warmth at home adequately.

If a household cannot afford 4 or more deprivation items, the household suffers from severe material deprivation. The generalized linear models (GLMs) used in the analysis, represent a generalization of regression analysis in modeling the relationship between one or more continuous dependent Y variables and one or more independent variables X, which may be categorical (factors) or continuous. Linear models with one dependent variable are called univariate and with more dependent variable are called multinomial. Under the GLM procedure, provided by the SAS EG statistical system, several different analyzes can be made: simple regression, multiple regression, one-factor analysis of variance mainly for unbalanced data sets, analysis of covariance, weighted regression, polynomial regression, partial correlation, and multi-factor analysis of variance. You can find out more about this topic in the literature (Garson, 2012) and (Tabachnik, Fidell, 2014). In our article, we used procedures SAS EG by combining multifactor analysis of variance and multiple regression.

2.2 Results and discussion

Since the goal of every advanced society is to reduce poverty and improve the social status of the population, it is also important to know the causes of its development. One of the basic indicators of the social situation of the household is its income. In our paper, the equivalent disposable income (EDI) will be the subject of the analysis - it is the "disposable household income divided by the equivalent household size"[35]. The interest will be the quantification of the impact of selected factors from the EU SILC database on the equivalent disposable income in materially deprived (MD) and nondeprived (NMD) households. Selected factors from the EU SILC database, the impact of which on EDI we have decided to verify, are as follows: Gender, Marital status (MS), Health, Education by ISCED, Economic Activity Status (EAS), Age at the head of the household and Household type (HT), Degree of urbanization,

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[34] http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Material_deprivation (accessed August 15, 2018)

[35] http://www.statistics.sk/pls/elisw/objekt.sendName?name=m_silk (accessed August 15, 2018)

Region by NUTS3, in which the household lives. In order to avoid distorted analysis results, we first diagnosed influential observations. Observations, for which the Cook Statistics value was greater than $4/n$ (number of observations) were excluded from the analysis. After removing these observations, which would dramatically distort the regression characteristics, we estimated the regression model. In the next step, we focused on the evaluation of the model as a whole (Soltes & Soltesova, 2016), while only statistically significant factors were included in the analysis. The result of the multi-factor analysis of variance F-test confirmed the significance of the model in the case of both materially deprived and nondeprived households. The final modified model for materially deprived households contains five statistically significant factors and explains 50.6 % of EDI variability of materially deprived households. The average EDI of materially deprived households in 2015 was 4378 €, with a standard deviation of 40.08% of the average EDI of materially deprived households. In material nondeprived households, on EDI affected seven statistically significant factors, but the resulting model only explains 28.8 % of EDI variability. Total nondeprived households had an average EDI of 7421 €, with a relative indicator of variability lower than for materially deprived households. When comparing the impact of individual factors on EDI, we must specifically approach the analyzed household groups. The most statistically significant impact on EDI of materially deprived households is the Economic activity factor (F statistics = 37.86) and in the case of nondeprived households, the factor Type of household (F statistics = 90.96). In both household groups, the statistically significant effect of average EDI from the household preference age was not demonstrated. In materially deprived households, the statistically significant influence of factors such as Marital status, Region and Health has also not been demonstrated. The reference categories, were determined by the model parameter estimation, based on a typical category well represented in the file or by emphasizing the differences in material deprivation among the categories. All interpretations are provided by ceteris paribus. Highlighted p-values mean, that the estimated parameter is statistically insignificant at the significance level of 0.1.

The materially deprived households (Table 2 on the left), whose person at the head of the household was unemployed, had an average of EDI by 2815.31 € lower in the reference period, than those whose person at the head of the household worked. Likewise, the materially deprived households, which had an inactive person at the head of the household, had lower average of EDI by 1512.34 €, compared to materially deprived households with a person at the head of the household, who worked. This fact confirms the importance of involving the person at the head of the household in the work process. In the group of materially nondeprived households, we can see for each EAS categories similar values of estimated regression coefficients such as in materially deprived households. By interpreting estimates of categories of the variable Household type, we only limit those that have proven to be significant (not highlighted). For MD households (Table 2 on the left), the number of insignificant categories is relatively high, which could be improved by joining individual categories into groups. However, we did not use this approach, because all of these categories were the significance in the nondeprived household group. Materially deprived households with one adult and at least one dependent child have the lowest average EDI (by 1,370.91 €) compared to two adult households with two dependent children. A similar situation occurred in single-member households as well as in households of two adults with three or more dependent children. In the group of materially nondeprived households, the income situation is significantly better, with the high significance of factor HT being manifested also in the

significance of all its categories (Table 2 on the right). The highest EDI compared to two
adult and two dependent children was reached by nondeprived households with no dependent
children (by 3350.67 € higher). On the other hand, in materially nondeprived households with
two adults and three or more dependent children, average EDI was lower by 843.87 € than in
a household with two adults and two dependent children.

Table 2: Estimates of regression coefficients and assess their significance for selected factors

Parameter		Estimate in MD	t Value	Pr > |t|	Estimate in NMD	t Value	Pr > |t|
EAS	inactive_person	-1512.34	-4.13	<.0001	-1266.90	-5.96	<.0001
EAS	retired	-645.70	-0.29	**0.7682**	532.90	1.28	**0.2010**
EAS	unemployed	-2815.31	-9.39	<.0001	-2134.90	-8.99	<.0001
EAS	at work	0.00	.	.	0.00	.	.
HT	1a_at_least_1ch	-1370.91	-3.04	0.0026	-483.69	-1.80	0.0725
HT	1adult	-1118.40	-2.78	0.0058	686.65	3.19	0.0014
HT	2a_1ch	-78.22	-0.16	**0.8743**	1276.04	8.36	<.0001
HT	2a_1r	682.98	0.85	**0.3979**	1611.08	3.43	0.0006
HT	2a_at_least_3ch	-849.21	-1.76	0.0793	-843.87	-3.98	<.0001
HT	2adult_0ch	403.04	0.91	**0.3643**	2330.44	13.53	<.0001
HT	other_0ch	676.91	1.54	**0.1255**	3350.67	21.54	<.0001
HT	other_with_ch	282.99	0.69	**0.4879**	1564.21	10.72	<.0001
HT	2a_2ch	0.00	.	.	0.00	.	.
Education	post secondary	503.18	0.63	**0.5287**	926.37	2.27	0.0234
Education	tertiary 1	350.20	0.41	**0.6814**	1333.02	3.44	0.0006
Education	tertiary 2_3	617.22	1.30	**0.1942**	2096.92	7.08	<.0001
Education	upper secondary	1140.80	4.32	<.0001	711.96	2.56	0.0107
Education	less than secondary	0.00	.	.	0.00	.	.
Urbanization	dense	1124.15	3.88	0.0001	578.23	4.40	<.0001
Urbanization	intermediate	156.28	0.67	**0.5057**	349.37	3.31	0.0009
Urbanization	sparse	0.00	.	.	0.00	.	.
Marital status	divorced	.	.	.	-1139.25	-4.34	<.0001
Marital status	marrried	.	.	.	-945.56	-3.86	0.0001
Marital status	single	.	.	.	-972.57	-3.69	0.0002
Marital status	widowed	.	.	.	0.00	.	.
Region	BB	.	.	.	-655.34	-3.42	0.0006
Region	KE	.	.	.	-526.69	-2.99	0.0028
Region	NR	.	.	.	-678.09	-3.53	0.0004
Region	PE	.	.	.	-762.33	-4.03	<.0001
Region	TN	.	.	.	-381.24	-2.01	0.0444
Region	TT	.	.	.	-201.45	-0.99	**0.3219**
Region	ZI	.	.	.	-769.83	-4.09	<.0001
Region	BA	.	.	.	0.00	.	.
Health	bad	.	.	.	-259.90	-1.14	**0.2563**
Health	fair	.	.	.	-346.09	-2.23	0.0260
Health	good	.	.	.	26.01	0.20	**0.8404**
Health	very good	.	.	.	0.00	.	.
Gender	female	766.22	3.32	0.0010	.	.	.
Gender	man	0.00	.	.	.	.	.

Source: (EU-SILC 2015, own processing in SAS Enterprise Guide)

By interpreting the estimates of parameter for the variable Education in materially
deprived households, only one statistically significant difference was found between
households with less than secondary and upper secondary education, with average EDI of
1140.80 € higher. The biggest difference in average EDI occurred, comparing nondeprived
households, whose person at the head of the household had a tertiary education of 2nd and 3th

degree compared to households, whose person at the head of the household had less than secondary education (higher by 2096.92 €). Only a slightly better income situation was in households where the superior had upper secondary education. The average EDI of the person at the head of the household with the first-degree tertiary education, was higher by 1333.02 € compared to households, where the person at the head of the household had less than secondary education. This result only highlights the currently highly preferred need for education. In both groups of households, the largest difference was between households with sparse and dense urbanization. The materially deprived households, whose person at the head of the household lived in densely populated areas had average EDI by 1124.15 € higher than those whose person at the head of the household lived in the sparsely populated area, however in materially nondeprived households average EDI was only by 578.23 € lower. Materially deprived households with a person at the head of the household, who lived in the territory with intermediate urbanization, was EDI higher than in those a person at the head of the household lived in a sparse urbanization, however this parameter may be considered as statistically insignificant at the materiality level of 0.1. Materially nondeprived households, headed by a divorced person, had average EDI by 1139.25 € lower than those, headed by a widow/er. On the height of EDI in this category could have affected for example the so - widow's pension. Materially nondeprived households, appeared very similarly, where the person at the head of the household was single or married, this person had lower EDI compared to those, in which the person at the head of the household is the widow/er. In the case, in which the person at the head of the household is single, an average EDI was lower by 972.57 € and in the case of married person by 945.56 €. This factor was only statistically significant in the MND group of households.   The regional aspect was also statistically significant only in the MND group of households, while all regions of Slovakia in nondeprived households had average EDI lower than in the Bratislava region, however based on the *p*-value, all estimates of parameter are statistically significant. The lowest average EDI compared to the Bratislava region had materially nondeprived households in the Žilina region, which was lower by 769.85 €. A similar situation in terms of average EDI in materially nondeprived households was in Prešov (lower by 762.33 €) and in Nitra (lower by 678.09 €) region than in Bratislava region. The smallest difference between averages EDI in materially nondeprived households can be observed in the Trnava region, by 201.45 € lower than in the Bratislava region, but statistically insignificant. An interesting fact is, that, in the case of materially deprived households, gender has been proved as significant factor. In terms of income, in this case, women are on this better off. The average EDI of households, where a woman is at the head of the household, is by 766.22 € higher than in the case of households, where a man is at the head of the household. In the usual gender comparison of incomes, this is usually the opposite.

3. Conclusion

Slovakia has set the target of eliminating at least 170,000 people from the risk of poverty and social exclusion by 2020[36]. One way to achieve this global goal is to reduce the number

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[36] Processed by: http://ec.europa.eu/europe2020/index_sk.htm (accessed August 15, 2018)

of materially deprived people, in order for households to be able to afford certain items, they must have sufficient income (Atkinson at al., 2017). In this post, we decided to approach and then describe, which relevant factors affect the equivalent disposable income in a group of materially deprived and nondeprived households. The construction of two regression models (realized under the same conditions) in both groups allowed us to compare the income situation of these groups of households. The obtained results are summarized at the following points, focusing only on the factors, which have proved to be significant in both models:

- The size of the impact of individual factors in the monitored groups was not the same. In the case of materially deprived households, the greatest impact on EDI has economic activity, followed by gender, degree of urbanization, household type, and education of the person at the head of the household.
- GLM models in both household groups were statistically significant, but the higher % of the EDI variability explain selected factors in the case of materially deprived households.
- When interpreting the impact of economic activity, the category of the unemployed was with the largest difference of average EDI in individual groups compared to employed category.
- From the household type perspective, the household with one adult and at least one dependent child was the most vulnerable income category in the case of materially deprived households, while in the group of nondeprived households, it was the household of two adults and three or more dependent children. On the other hand, from the EDI point of view, the most disadvantaged are households without dependent children, with the strongest difference in the group of materially nondeprived households.
- The presently preferred need for education is confirmed by the fact that average EDI is gradually decreasing from the highest to the lowest level of education with greater emphasis in the group of materially nondeprived.
- The degree of urbanization has a statistically significant impact in both household groups, with higher average EDI reaching households with dense urbanization compared to sparse urbanization. It should be noted, that this difference is smaller in materially nondeprived households, which suggests the greater efforts of these households to secure income.

The global analysis of the impact of selected factors on their EDI found that, when comparing with the reference categories for individual factors, that in the group of materially deprived households: the most endangered income category is for a member of household, who is unemployed, male, with less than secondary education, in a household with 1 adult and at least one dependent child and in a sparsely populated area.

Acknowledgment

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GLOBALISATION AND ECONOMIC POSITION
OF SENIORS IN THE CZECH REPUBLIC

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Abstract. Demographic development is one of the current often-discussed concepts of the contemporary world. Demographic aging of the society has been affecting, to a greater or lesser extent, all countries since the mid-20th century, and according to long-term forecasts of the future, development of the total population and age structure, and the proportion of older people in the population will continue to grow. Even the projection of the Czech Statistical Office shows that the changes in the age structure of the Czech population will be very significant. The proportion of persons under the age of 15 will be reduced due to a decrease in birth rates, while the proportion of persons over 65 will show a significant increase. This article focuses on the economic status of seniors in the Czech Republic. The theoretical part defines the basic terms that related to this topic. As well, the article deals with the status of seniors in the labour market, the unemployment of older people and analyses the degree and structure of their employment. The analytical part of the paper analyses different types of income and expenditures of seniors. The data obtained has been analysed with a focus on prediction of the development of the economic situation of seniors. Finally, the economic situation of seniors in the Czech Republic is compared with selected EU countries, such as Slovakia, Germany and Sweden.

Keywords: Senior, income, expenditures, employment, economic position

JEL Classification: D12, D14, J21

1. Introduction

Although humanity faces many changes in today's globalised environment, from the point of view of individual influence, demographic changes are the most important. The demographic aging of society has, to a greater or lesser extent, affected all countries since the mid-20th century, and according to long-term projections, the proportion of older people in the population will continue to rise (Bobro, 2018; Henefeld, 2018; Keinis, 2017). In the Czech Republic (CR), the proportion of the youngest population, aged 0-14, dropped from 24% in 1950 to 15% in 2016. On the contrary, the proportion of persons over 65 years of age increased over the same period by more than 10% while the proportion of persons over 85 years of age increased significantly. Among European countries, the Czech Republic ranks among the average in the proportion of persons over 65 years of age (see Figure 1). The

highest proportion of the population in the monitored group lives in Italy; the lowest the representation of this age group on the other hand is in Turkey.

It can be said that human demographic changes are positive, as mortality is declining over the long term, and the health and well-being of the population (including the elderly) is steadily improving at least in economically developed countries. Extending life expectancy in most countries today is one of society's greatest achievements. Opportunities for a more active life are expanding for aging people, improving the quality of their lives, and allowing them to better and longer realise their work potential and take part in social activities.

Figure 1: Percentage of Population Aged 65 and Over in Europe (2000 and 2016)
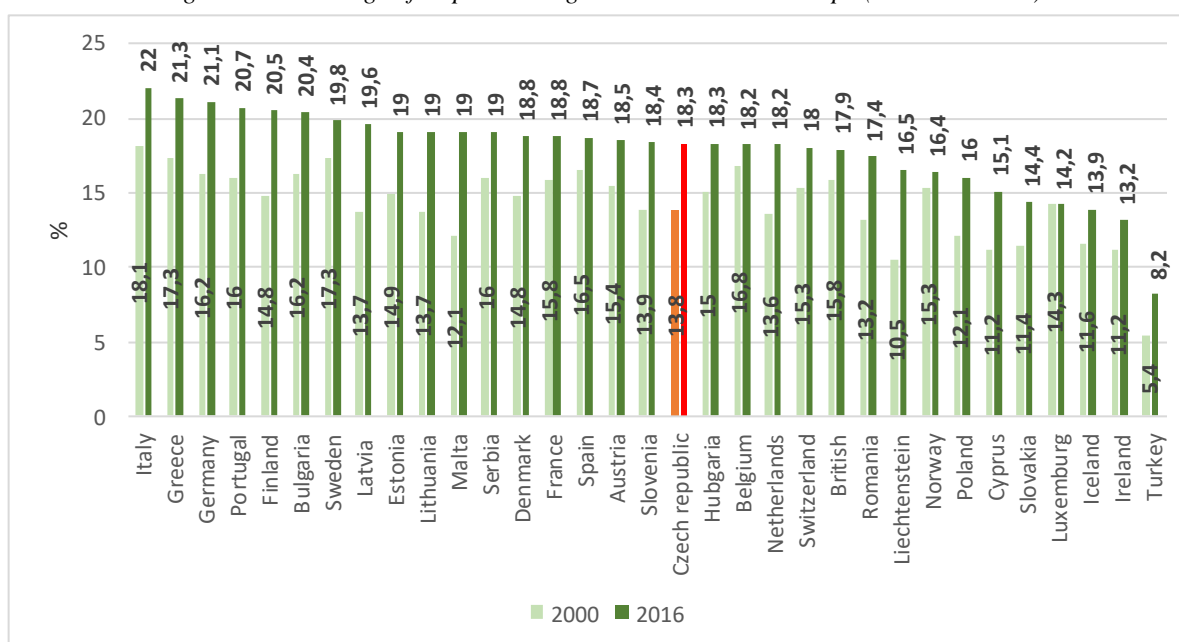
Source: (ČSÚ, 2017A, Author's own work)

On the other hand, however, these changes bring serious social dilemmas. With lifestyle changes, birth rates are decreasing over the long term, and the population generally is getting relatively older. The fact that people are living longer lives, with a normal life expectancy of around 85 years, is now becoming a burden on continuously funded pension systems in many countries, as well as being a financial and organisational burden on health services and social care (Goncharova & Degtereva, 2017; Husáková et al., 2018). Intensive technological changes are modernising a number of traditional professions, increasing the demands for their performance or retraining, and the employability of the elderly is consequently decreasing. Thus, the issue of old age is increasingly becoming a matter of existential concern related to the meaningfulness, quality, dignity, and autonomy of one's life as well as social participation (Rašticová et al., 2016). The UN Secretary-General at the time aptly formulated the situation and challenges that demographic change brought on the occasion of the Second World Assembly on Aging: "*We are in the midst of a quiet revolution that far exceeds demographics with its fundamental economic, social, cultural, psychological and spiritual impacts*" (Kofi Annan, 2002). In continuing this idea, the year 2016 was proclaimed the Year of King Lear in Great Britain, with an emphasis on the participation of older people against their segregation and exclusion, with an emphasis on keeping control in their own hands and rejecting an undue decline in the standard of living in their old age. And the question of assessing the

economic status of seniors in society and their standard of living is crucial in the context of the content of our article. The text of an article does not, of course, claim the presentation of the issue in its entirety, such as for example (Sardak et al., 2017; Reese et al., 2016; Pelcová et al., 2018; Lay & Bugueno, 2016). As part of our analysis, we have focused mainly on the assessment of key economic indicators such as income and expenditure of seniors, property ratios, labour market participation rates and the extant of the risk of poverty. The selected criteria of the economic position of seniors in the Czech Republic are further compared with those in selected EU Member States as well as with EU-wide average indicators.

2. Methods

With regard to the topical focus of this article, we will first clearly define the term "senior", and then we will describe and evaluate, using selected statistical methods, the relevant data obtained mainly from the databases of the Czech Statistical Office (CSO), the Ministry of Labour and Social Affairs (MLSA) and Eurostat. For the description of the economic situation of the group of persons in question, data on income between 2010 and 2016 and expenditures of the elderly, the employment rate and unemployment rate of older people were collected, as well as poverty rates and other information characterising the standard of living of the group of persons concerned. The data obtained were arranged in a time series, which described development trends and predictions of future trends of the given indicators. To assess the links of some of the data analysed, the degree of their dependence was determined using a simple correlation coefficient. In addition, standard scientific methods, qualitative, quantitative and comparative data analysis with on-going synthesis based on the empirical-inductive method of cognition were used.

3. Analysis of the Economic Situation of Seniors in the Czech Republic

The term *senior* is not refined in Czech legislation, and, as in the rest of the world, there is no single statistical definition of the term. According to (Sak & Kolesarova, 2012), a senior is *"a person finishing off a life stage with a specific status in society"*. The CSO defines three basic age groups of the population: 0-14 years, 15-64 and 65+, in accordance with the customary practices of the United Nations. However, Eurostat uses slightly different population differentials in its databases: 0-15 years, 16-64 years and 65+. In selected outcomes observing the age structure of the population, the CSO uses a more detailed breakdown in the range of five-year age groups; in others the age of seniors is not defined at all, but it considers old-age pensioners as seniors, while the Czech Social Security Administration (CSSA) defines retirement age as "*acquiring the necessary period of insurance and reaching retirement age, or his/her derived age or the age of 65*" (CSSA, 2015).

The *retirement age* in the Czech Republic is not fixed but is continuously increased on the basis of valid legislation. In 2017, the retirement age for men is 63 years and 2 months; for women without a child, 62 years and 4 months, 62 years and 8 months or for births after 1 January 1955 and for women with two children, it is 60 years and 4 months, or 60 years and 8 months if the date of birth is after 1 January 1957. At the same time, the CSO identifies the economic and social changes in society especially with regard to families and households. The CSO groups of households are divided according to their heading: households of

employees, households of self-employed persons, households of retirees, households of unemployed and other households.

Due to the availability of data in the CSO and Eurostat statistics, this segmentation of households was used for the purposes of this article. Regarding the issue of re-employment of seniors in the labour market, the age group from 50 years and over was also included in the part of the outputs. This is due to the statistics of the Ministry of Labour and Social Affairs, which monitors this category, because these vulnerable groups also belong on the labour market.

3.1   Income of Seniors in the Czech Republic

The end of productive age and retirement represent, first and foremost, a significant drop in income from the economic point of view. In terms of their structure, 83% of the income of seniors in the Czech Republic is accounted for through social incomes (in particular pensions, disability insurance benefits, government social support benefits and other government social security benefits), 12.6% of total income is represented by income from a dependent activity, 2% by business income and 2.5% by other income. It is clear that in the structure of the total income of seniors, the basic and most stable part of social incomes is represented by, in particular, the proportion of retirement pensions, which accounts for 97% of their total amount.

Table 1: Recipients of Retirement Pensions by Age and Gender (CR, 2016)

	Men		Women	
Pension amount	Number	v %	Number	v %
Up to 4 999 CZK	7 834	0,94	16 647	1,75
5 000 CZK – 7 999 CZK	17 194	2,05	76 974	8,09
8 000 CZK – 10 999 CZK	156 889	18,74	518 352	54,50
11 000 CZK – 13 999 CZK	444 160	53,06	298 229	31,36
14 000 CZK – 16 999 CZK	180 386	21,55	32 544	3,42
over 17 000 CZK	30 646	3,66	8 330	0,88
Total	837 109	100,00	951 076	100,00

Source: (*CSU, 2017 B, Author's own work*)

The living standard of Czech seniors is thus largely dependent on the current amount of their old-age pension. In the Czech Republic, as in most other European countries, these are based on ongoing funding and intergenerational solidarity. No funds are created in this system; the contributions are immediately redistributed and paid to the beneficiaries. The data in the table (Table 1) show the distribution of old-age pensions to their recipients according to their amount and gender in 2016. During this period, the average monthly amount of retirement pension in the Czech Republic was 11, 475 CZK. A significant difference in the amount of retirement pension paid is obvious between men and women. While the average pension paid to men was 12,678 CZK, only 82.15% of this amount was paid to women, which in monetary terms is 10,416 CZK (CSO, 2017, B). In order to assess the economic position of seniors in any society, the so-called *replacement ratio*, which expresses the ratio of the wage level at the time of retirement and the amount of the first income received, is very important. The replacement ratio is significantly higher if an employee with below-average earnings retires when the change in the economic situation is not so obvious. On the other hand, for a person who has reached above-average earnings during the period of employment, the

replacement ratio is low and the drop in the standard of living of the individual is more pronounced. The ratio of the average monthly retirement pension to the average monthly net wage in the Czech Republic is, in the long term, on average 53%. The replacement ratio is part of the comparative analysis in the following text (Table 4). Let us also note that there is a relatively high employment rate for people aged 55-64 in the Czech Republic. Between 2010 and 2016, the employment rate of this group increased from 46.5% to 58.5%. Even the employment rate of persons over 65 years of age in the Czech Republic is, in the long run, above the EU average (see Table 4). The largest proportion of employment can be seen in the category of scientific and professional psychiatric workers, craftsmen and skilled manufacturers, processors and repairers.

3.2 Expenditures of Seniors in the Czech Republic

Key expenditure items for households of economically inactive Czech pensioners are *consumption expenditures*. The CSO uses the classification CZ-COICOP, which is part of the system of national accounts, for expenditures that are issued for the benefit of an individual or household.

Table 2: Dependence of Individual Categories of Expenditure on Average Income (2010–2016)

Expenditure Category	Correlation Coefficient	Dependency
01 Food and non-alcoholic beverages	0.884	Strong
02 Alcoholic beverages, tobacco	0.881	Strong
03 Clothing and footwear	0.770	Strong
04 Housing, water, energy, fuel	0.534	Medium
05 Housing furnishings and appliances, repair	0.005	Almost zero
06 Health	-0.414	Weak
07 Transport	0.314	Weak
08 Post and telecommunications	-0.031	Almost zero
09 Recreation and entertainment	-0.485	Weak
10 Education	0.316	Weak
11 Food and housing	0.961	Almost perfect
12 Other goods and services	0.953	Almost perfect

Source: (ČSU, 2017 B, Author's own work)

Comparing the structure of consumption expenditures of individual household groups, among households of retired people a larger proportion of expenditures was recorded on food and non-alcoholic beverages (24% of total consumption expenditure), housing expenses (28% of total expenditures) and health expenditures (4% of total expenditures). The previous table (Table 2) summarises the conclusions of our correlation analysis, which confirmed the dependence of the individual categories of expenditure on the average pension in the period 2010-2016. A very positive finding in the analysis is the fact that in the group of households of non-working seniors there was a surplus of income over expenditures, when seniors do not consume their entire disposable income and are able to generate positive savings. Their average creation in non-working-age households was 6.11% over the period. We can also see decreasing differences in household and retirement furnishings. Among the standard furnishings for households of non-working pensioners can now be included a colour TV, a washing machine, and a mobile phone, and seniors are also outfitting their households with

computers. These findings indicate an improving standard of living for non-working pensioners.

4. Results and Discussion

In order to compare the economic situation of seniors in the Czech Republic based on the selected criteria, we selected the economies of Slovakia, Germany and Sweden, and then compared them with the average values of selected indicators across the EU. As far as income is concerned, we first analysed the replacement ratio. Although the value of the EU-wide replacement ratio is growing steadily over the period, a decline in the indicator due to a higher rate of wage growth than the growth rate of pensions has been observed for all countries surveyed. Among these countries, the replacement ratio is the highest in Slovakia, where the income for individuals who finish their economic activity is reduced by only 40%. A similar situation is in Sweden. The decline in income is surprisingly highest in Germany, where the average replacement ratio is over 50% in the long term, which means that German pensioners' incomes are less than half their income in the period of their economic activity. Indicator values for 2016 are shown in Table 4.

Table 3: Median Net Incomes in 2016 (EUR/Year)

Age Gender Country	16–64 Years			65 and Older		
	Total	Men	Women	Total	Men	Women
EU	17 114	17385	16854	15 555	16546	14771
CR	8 475	8 673	8 267	6 554	6 793	6 384
Germany	22 459	23 021	21 974	18 669	19 359	18 094
Slovakia	7 298	7 399	7 215	6 500	6 699	6 347
Sweden	27 178	27 349	27 072	20 376	22 227	18 708

Source: (Eurostat, 2016, Author's own work)

The median of net income in 2016 is shown in Table 3. From the data presented, it is clear that the largest difference in income between the elderly and the working age group is in Sweden and amounts to 6,802 EUR. On the contrary, the smallest fall in income can be seen in Slovakia where, after the peak age of 65, individuals are down by 798 EUR. The EU average income gap of 1,559 EUR is most closely related to the Czech Republic with an amount of 1,921 EUR. It is interesting to compare the difference in income from the perspective of women and men. While in the Czech Republic the minimum income gap between the sexes is low, in Sweden, the income for men is reduced by 5,122 EUR, while for women it is 8,364 EUR. A significant difference can also be seen in EU-wide data where men's incomes are lower by only 839 EUR, while for women this is a decrease of 2,083 EUR. Significant disparities between incomes for seniors in each country also show net income medians even after they have been converted to the Purchasing Power Standard (PPS). Although, after the recalculation, this income increased to 10,464 in the case of the Czech Republic, it is only 56% of the income of seniors in Germany.

A comparison of household expenditure of seniors confirms the same characteristics in all countries surveyed. In particular, in the percentage distribution of the structure of consumption expenditures, the highest expenditure share is that of housing, followed by expenditures on food and non-alcoholic beverages (see Table 4). The highest health

expenditure was recorded in Germany (a total of 6.7% of consumer spending), while these expenditures in the Czech Republic and Slovakia copy the EU average, which is 4.5% in this expense category. In Sweden, the highest expense on seniors is seen for recreation and culture (13.3%), while comparable expenditure in Slovakia is 5.1% and the EU average is 8.4%. Other selected characteristics of the comparative analysis are shown in the following table (Table 4).

Table 4: Selected Characteristics of Comparative Analysis (data from 2016)

Indicator Country	Replacement ratio in%	Public expenditure on pensions in % GDP	Employment rate of persons 65+ in%	Expenditure on food and non-alcoholic beverages in%	Expenditure on housing in%	Rate at risk of poverty in%
EU	58	12	5.6	17.9	33.2	14.7
CR	53	9.5	6.3	23.3	28.7	8.1
Germany	46	10	6.6	11.6	33.8	17.3
Slovakia	62	8.7	2.6	24.7	43.7	5.7
Sweden	57	8.8	9.1	13.2	39.7	16.8

Source: (Eurostat, 2016, Author's own work)

5. Conclusion

The aim of this paper was to outline selected economic indicators, according to which the standard of living of seniors may be assessed. It can be said that the economic situation of Czech seniors appears to be relatively good if assessed in terms of the average. However, seniors represent a very diverse population which cannot really be consolidated. Significant differences in the standard of living of seniors can be seen in a more detailed analysis, in particular through an age group or gender perspective, where 23% of men and 67% of women were below the average pension rates in 2016. Similarly, comparisons with selected EU countries and the European average values of selected indicators have shown that the economic level of Czech seniors is not satisfactory. The issue of life in old age is very broad and complex. Let us hope that society today will be interested in finding an optimum solution.

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SPATIAL ANALYSIS OF THE STANDARD OF LIVING OF THE POPULATION IN THE EUROPEAN UNION

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Abstract. The standard of living of the population is currently considered one of the most important determinants of socio-economic development. Already in the middle of the last century, changes in the level of life and its regional differentiation aroused widespread interest of politicians, economists and many researchers. For a number of years, therefore, attempts have been observed to offset the differences regarding the quality of life of people with local and global reaches. The striving to reduce these differences in particular regions is also a key goal of the integration processes in Poland and the European Union. In spite of so many actions taken, problems related to the alignment of the standard of living of the population still exist. The main objective of this paper is the spatial analysis of the diversity of living standards in Poland and in the European Union. For this purpose, selected methods of multidimensional comparative analysis as well as measures of global and local spatial autocorrelations will be used.

Keywords: spatial analysis, standard of living, multidimensional comparative analysis

JEL Classification: C13, C49, I30

1. Introduction

The living standards of the population are spatially diversified, which is significant related to the various socio-economic development of individual regions (countries). In accordance with the assumptions of the strategy for the development of the region, comprehensive and sustainable socio-economic development is to contribute to raising the quality of life of citizens. In turn, analyzes regarding the standard of living can be used, among others to shape regional or local development policy. This increases the demand for information about the analyzed phenomenon.

However, the analysis of this phenomenon is quite difficult. International research of the standard of living of the population mainly encounter problems related to obtaining reliable and comparable statistical data that would fully characterize the described phenomenon. As a result, many authors of this type of analysis had to limit the scope of their research. To study the standard of living, from among many methods of multivariate analysis, one can apply the taxonomic measure of development proposed by Hellwig. This measure allows to describe an object that is usually defined by a set of diagnostic features, one aggregate value. Therefore, it enables a numerical description of complex phenomena that can not be directly measured.

When analyzing the standard of living, it is worth taking into account the phenomenon of spatial autocorrelation. The use of spatial methods in socio-economic analyzes is becoming increasingly popular among researchers and practitioners dealing with regional analyzes (Kopczewska, 2013). These methods are applied in the study of phenomena influenced by localization and spatial interactions (e.g Mastalerz-Kodzis & Pospiech, 2016, A; Mastalerz-Kodzis & Pospiech, 2016, B); Zeug-Zebro & Miskiewicz-Nawrocka, 2017, A; Zeug-Zebro & Miskiewicz-Nawrocka, 2017, B; Warzecha & Wojcik, 2015). The study of spatial dependencies makes it possible to determine the strength of links between countries, and also allows to isolate the clusters of countries similar to each other due to the level of the analyzed phenomenon.

The main objective of the research was the spatial and comparative analysis of the standard of living of the Polish population and population of other European Union Member States. For this purpose, the taxonomic measure of development as well as measures of global and local spatial autocorrelation will be used. The basic source of data will be collections collected by the European Statistical Office Eurostat and the Central Statistical Office in Poland. All calculations and maps were made in the statistical program R CRAN and Microsoft Excel.

2. Taxonomic measure of the development

One of the tools of the multidimensional analysis allowing to study the level of life of the population is the taxonomic measure of development proposed by Z. Hellwig (1968).

Building a taxonomic measure consists of three stages. Having data matrix, we normalize (standardize) the values, following the formula:

$$y_{ij} = (x_{ij} - \bar{x}_j)/S_j, \qquad i = 1,...,n; \quad j = 1,...,m, \tag{1}$$

where: $\bar{x}_j$ mean of feature j, S_j standard deviation for j.

Next, the module method is used, and in the normalized matrix of m variables, the highest value is taken, module y_{0j}. The Euclidean distance from the module is calculated, using the formula:

$$d_i = \left[\frac{1}{m}\sum_{j=1}^{m}(y_{ij} - y_{0j})^2\right]^{1/2}, \quad i = 1,...,n. \tag{2}$$

The shorter the distance of the given object from the module, the lower is the value d_i. The obtained variable is not normalized, which next is transformed into a stimulant using the formula:

$$H_i = 1 - d_i/d_0, \quad i = 1,...,n. \tag{3}$$

where:
   H_i – taxonomic measure of development for object i,
   d_i – distance of i object from module,
   d_0 – standard to assure that variable H_i will take values ranging from 0 to 1, for example:

$$d_0 = \bar{d} + 2S_d, \tag{4}$$

where: $\bar{d}, S_d$ - mean and standard deviation d_i.

3. Spatial autocorrelation

There are two types of indicators of spatial associations (ISA): global and local measures of autocorrelation. The global autocorrelation follows from the existence of correlations across the spatial unit test. The local measure shows spatial dependence between the variable and its neighbouring units in a particular location. The most commonly used global and local measures are: the global Moran statistics (Moran, 1950) and the local Moran statistics (Anselin, 1995). The spatial autocorrelation occurs when a certain phenomenon in a single spatial unit alters the probability of occurrence of this phenomenon in the neighbouring units (Bivand, 1980). In general, a positive spatial autocorrelation occurs when we observe the accumulation, in terms of location, of high or low values of observed variables. In the case of negative autocorrelation, high values are adjacent to low, and low to high, creating a kind of checkerboard (Suchecki, 2010). The lack of spatial autocorrelation means spatial randomness, i.e. high and low values of observed variables are distributed independently.

3.1 Global statistics

The Moran statistics is one of the most widely used measures in the study of spatial autocorrelation. The global Moran's I is defined as follows:

$$I = \frac{n \sum_{i=1}^{n} \sum_{j=1}^{n} w_{ij} (x_i - \bar{x})(x_j - \bar{x})}{\sum_{i=1}^{n} \sum_{j=1}^{n} w_{ij} \cdot \sum_{i=1}^{n} (x_i - \bar{x})^2} = \frac{n}{S_0} \cdot \frac{z^{\mathbf{T}} W z}{z^{\mathbf{T}} z}, \tag{5}$$

where: x_i, x_j are the values of variables in the spatial unit i and j, $\bar{x}$ is the mean of the variable for all units, n is the total number of spatial units that are included in the study, S_0 is the sum of all elements of a spatial weight matrix, z is a column vector of elements $z_i = x_i - \bar{x}$, W is the spatial weight matrix degree n, defining the structure of the neighbourhood, w_{ij} is an element of weights matrix W (Kopczewska, 2006). This statistic takes values ranging from [–1, 1]: positive, when tested objects are similar, negative, when there is no similarity between them, and approximately equal to 0 for a random distribution of objects.

Cliff and Ord (1973) have shown that the distribution of Moran statistics is asymptotically normal. Thus, the statistical significance of spatial autocorrelation can be verified using normalised statistics $I_S \sim N(0,1)$:

$$I^S = \frac{I - \mathrm{E}(I)}{\sqrt{\mathrm{Var}(I)}}, \tag{6}$$

where: $E(I)$ is the expected value of Moran's and Var(I) is its variance:

$$\mathrm{E}(I) = -\frac{1}{n-1}, \qquad \mathrm{Var}(I) = \frac{n^2 S_1 - n S_2 + 3 S_0^2}{(n^2 - 1) S_0^2} - \frac{1}{(n-1)^2}, \tag{7}$$

$$S_0 = \sum_{i=1}^{n}\sum_{j=1}^{n} w_{ij} \;,\; S_1 = \frac{1}{2}\sum_{i=1}^{n}\sum_{j=1}^{n}\left(w_{ij} + w_{ji}\right)^2 \;,\; S_2 = \sum_{i=1}^{n}\left(\sum_{j=1}^{n} w_{ij} + \sum_{j=1}^{n} w_{ji}\right)^2 . \quad (8)$$

If the Moran statistic has a value $I \approx -(n-1)^{-1}$, $I^S \approx 0$, it indicates a random spatial pattern. However, when $I > -(n-1)^{-1}$, $I^S > 0$, the spatial autocorrelation is positive, and if $I < -(n-1)^{-1}$, $I^S < 0$, the spatial autocorrelation is negative.

3.2 Local statistics

The local Moran determines clusters of spatial units and verifies whether the unit is surrounded by neighbouring units with similar or different values of the variable studied in relation to the random distribution of these values in the studied space (Zeug-Żebro, Wolny-Dominiak, 2012).

In the case of non-standardised values of the variable and row-standardised spatial weight matrix (Arbia, 2006) ($\sum_{i=1}^{n}\sum_{j=1}^{n} w_{ij} = n$), the local Moran is given by:

$$I_i = \left[(x_i - \bar{x})\sum_{j=1}^{n} w_{ij}\left(x_j - \bar{x}\right)\right]\Bigg/\left[\sum_{i=1}^{n}\frac{(x_i - \bar{x})^2}{n}\right], \quad (9)$$

where all the elements of the formula are defined as in the global Moran's I. The standardised local Moran's I_i^S is used to test the statistical significance of local spatial autocorrelation (Anselin, 1995):

$$I_i^S = \frac{I_i - \mathrm{E}(I_i)}{\sqrt{\mathrm{Var}(I_i)}} \sim N(0,1), \quad (10)$$

where $E(I_i)$ is the expected value of the local Moran and $\mathrm{Var}(I_i)$ is its variance

$$\mathrm{E}(I_i) = -\frac{\sum_{j=1}^{n} w_{ij}}{n-1} \quad \mathrm{i} \quad \mathrm{Var}(I_i) = \frac{(n-k)\sum_{i\neq j} w_{ij}^2}{n-1} + \frac{2(2k-n)\sum_{l\neq i}\sum_{h i\neq i} w_{il}w_{ih}}{(n-1)(n-2)} - \left(\frac{-\sum_{i\neq j} w_{ij}}{n-1}\right)^2, \quad (11)$$

where $k = \left(\frac{1}{n}\sum_i (x_i - \bar{x})^4\right)\Bigg/\left(\frac{1}{n}\sum_i (x_i - \bar{x})^2\right)^2$.

When I_i^S is negative, the spatial autocorrelation is negative, too, i.e. when the object is surrounded by spatial units with significantly different values of the studied variable. The spatial autocorrelation is positive when $I_i^S > 0$, the object is surrounded by similar neighbouring units.

4. Empirical analysis

The object of the study was analysis of the standard of living in countries (NUTS 0) of the European Union in years 2010, 2013 and 2016. In the first stage, on the basis of 17 diagnostic

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variables[37] (divided into 6 thematic groups (Table 1[38])), a taxonomic measure of Hellwig's development was constructed[39].

Table 1: Set of diagnostic variables

Variable symbol	Name of the variable	S/D*	Name of the group
X11	unemployment rate [%]	D	Labor market
X12	number of employed people of working age	S	
X21	number of beds in the hospital	S	Health protection
X22	generalist number of medical practitioners per 100000 inhabitants	S	
X23	total number of deaths	D	
X24	infant mortality rate	D	
X25	total fertility rate	S	
X31	tertiary education (females from 15 to 29 years)[%]	S	Education
X32	pupils aged between 3 years old and the starting age of compulsory education [%]	S	
X33	participation rate in education and training (total from 15 to 64 years)[%]	S	
X41	share of housing costs in disposable household income[%]	S	Living conditions
X42	mean equivalised net income [€]	S	
X43	persons who cannot afford a computer[%]	D	
X51	number of motor coaches, buses and trolley buses	S	Transport
X52	passenger cars per 1000 inhabitants	S	
X53	number of commercial airports	S	
X61	greenhouse gases emission (kilograms per capita)	D	Environment

* Stimulants (S)/ destimulants (D)

Source: (own elaboration)

The estimated results of Hellwig's measure were the basis for the classification of these countries, due to homogeneous groups, from the point of view of the degree of the phenomenon studied (ie the level of development of the standard of living). The total volatility range of measures was divided into four class to which the regions were assigned according to the following rules rules (Kuc, 2012; Zeliaś, 2000):

- class I (high levels of the studied phenomenon): $\overline{H} + S_H \le H_i$,

- class II (medium levels of the studied phenomenon): $\overline{H} \le H_i < \overline{H} + S_H$,

- class III (low levels of the studied phenomenon): $\overline{H} - S_H \le H_i < \overline{H}$,

- class IV (very low levels of the studied phenomenon): $H_i < \overline{H} - S_H$,

where:

$$\overline{H} = \tfrac{1}{n}\sum_{i=1}^{n} H_i \, , \quad S_H = \sqrt{\tfrac{1}{n}\sum_{i=1}^{n}\left(H_i - \overline{H}\right)^2} \, . \tag{12}$$

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[37] The division of diagnostic features into stimulants and destimulants was based on a linear correlation coefficient.

[38] The limitation in the selection of potential variables was the lack of complete and comparable data in the analyzed years.

[39] Variables X11, X21, X22, X24, X25, X31, X41, X42, X43, X52, X53, X61, due to high discriminative capacity, as well as high information capacity (low correlation with other variables), were used to construct a synthetic measure of standards of living

Figure 1 presents the classification of the EU countries due to the standard of living of the population measured by value of the Hellwig's taxonomic development measure in 2010, 2013 and 2016.

Figure 1: Hellwig's taxonomic development measure in countries of the European Union in 2010, 2013 and 2016
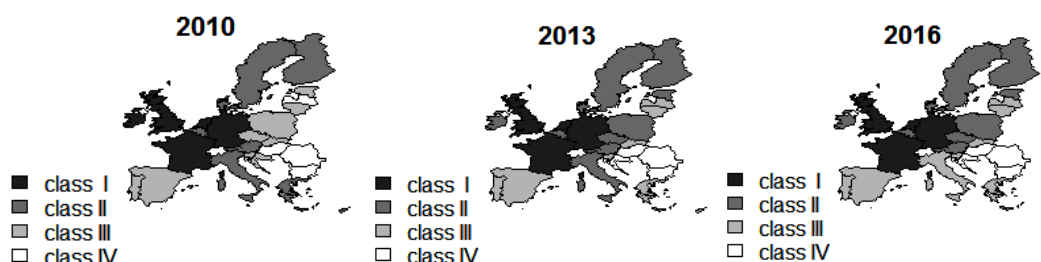
Source: (own elaboration)

Analyzing these maps it can be noted that in the years 2010, 2013 and 2016, half of the countries of European Union belonged to the class I or II which indicate the high and medium level of standard of living. During the period under review, 18 regions didn't change their place in the classification, 4 countries changed the class in which the studied phenomenon was higher and in other regions changed class to one which was characterized by a lower level of aging. The countries with the lowest values of HDI were located in the eastern part of EU(Bulgaria, Croatia, Hungary, Lativia, Malta, Romania). On the other hand, the highest values of this measure concerned in north-west part of UE (Germany, Denmark, Ireland, France, Netherlands, United Kingdom).

In the next stage of the research estimated the spatial autocorrelation of standards of living in EU (based on the taxonomic measure of development calculated for each region). Calculated values of global Moran are presented in Tables 2.

Table 2: Global Moran in the years 2010, 2013 and 2016

Year	Global Morana statistic			
	I	E (*I*)	Var (*I*)	*p-value*
2010	0.67695	-0.04000	0.03533	6.82*10^{-5}
2013	0.67647	-0.04000	0.03532	6.89*10^{-5}
2016	0.60981	-0.04000	0.03571	2.92-10^{-4}

Source: (own elaboration)

Analysing the data contained in Table 2, it can be concluded that the global Moran values are positive and statistically significant. This means the similarity of spatial units (countries) due to the level of standards of living.

The next stage of research was to estimate the local Moran in order to identify the spatial structure. The results of spatial distribution for the regions of European Union in the years 2010, 2013, 2016 are shown in Figure 2.

Figure 2: Hellwig's taxonomic development measure in countries of the European Union
in 2010, 2013 and 2016
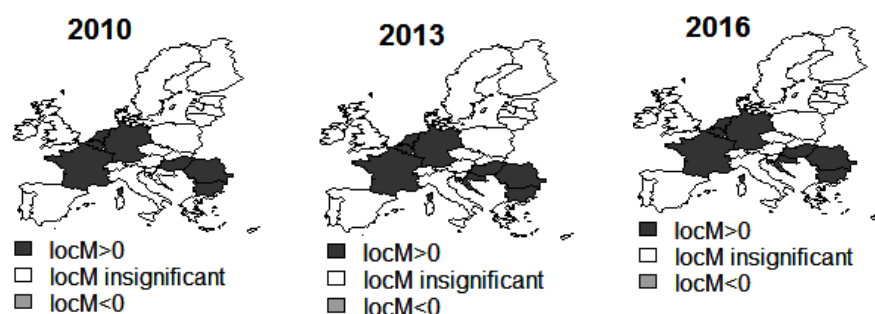
Source: (own elaboration)

Based on these maps (Figure 2) it can be seen that only some of the local Moran are statistically significant. In the studied period, significant and positive values of local Moran obtained for the taxonomic measure of development only for 7 regions in 2010, 8 in 2013 and 2016. This means that in chosen years, these regions have been surrounded by units with similar values of the taxonomic measure of development which expressing the level of standards of living. Therefore, the above-mentioned regions of European Union have been clusters. For other units local Moran's was statistically insignificant.

5. Conclusion

The study analysed the level of standards of living in the countries of EU and also researched the spatial correlation of this phenomena. Based on the conducted research, it can be concluded that in the years 2010, 2013 and 2016 almost half of the countries were characterised by the highest level of standards of living. This confirms the thesis that the most countries belonging to the European Union, compared to many countries also lying on other continents of the world, are socially and economically well-developed countries. The conducted analysis of spatial correlation of the level of standards of living in the EU's countries based on local Moran statistics indicates the existence of positive spatial autocorrelation, that is, the formation of territorial unit clusters with similar values of the level of standards of living. In further studies, it would be worthwhile to carry out an analysis regarding smaller spatial units, however a smaller scope of data available for this level is an important problem.

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WORK SAFETY SYSTEM IMPROVEMENT AND DECREASING WORK ENVIRONMENT RISKS IN CONSTRUCTION INDUSTRY

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Abstract. Since the beginning of the Industrial Revolution, safety regulations and safe working conditions has been an essential task to retain an amiable and comfortable working atmosphere, especially for the employees at the construction sites in England, U.S.A. and many other countries. Preventing accidents and risk of accidents became the most vital priority method in maintaining an international safe working atmosphere. First of all, the aim of the paper is to portray the vital improvement process and conditions within the work safety system and to decrease the environmental risk factors involved within the working atmosphere within the construction industry worldwide and to increase the efficiency and production levels. Second of all, our plans are to evaluate the risks involved within the working environment at the construction sites and to develop the necessary preventive measures for obtaining positive results within Latvia and worldwide. Our intent is to implement the comparison and grouping methods for analysing the statistical data as well as the working environmental risk evaluating methods and schemes will be applied. Furthermore, our research investigation will offer the proposals of practical use for reducing psycho-emotional and ergonomic factors caused and the chemical working environment risks at the construction sites; considering the main risk factors that are frequently encountered by the employees at the worldwide construction sites.

Keywords: labor protection, risks, environmental risk.

JEL Classification: R19, L89, F60

1. Introduction

During today's rapid changing times, the global working environment is also changing – working conditions are becoming more intensive, requiring maximum concentration, matching workload with human mental and physical abilities, and solving various organizational issues (Hill, 1994). In fact, this has been a vital global concern addressed by the unions in England, the U.S. and many countries since the beginning of the Industrial Revolution. Currently, the traditional work environment risks such as noise, vibrations, dust, and hazardous chemicals are a serious menace problem in factory sites world–wide (Fong et al., 1999). These are globally considered as menacing factors or as unsafe workplace conditions with a wide range of psychological and social problems such as occupational

diseases, accidents at work, stressful reactions, dissatisfaction with work, and lack of welfare. Most of these problems can be reduced or even eliminated that will improve both the health and well–being of employees and the productivity and overall local and global economic performances (Harrison & Petty, 2002). Occupational risk factors are present in all sectors of local and global economies and can affect a large number of employees (Wacher & Yorio, 2014). The following vital occupational risk factors should be mentioned as the most important (Latvian Ministry of Welfare, 2007): chemicals (varnishes, paints, synthetic detergents); physical factors (noise, vibration, micro – climate, lighting); dust (welding spray, abrasive dust, wood dust); biological factors (tick – borne encephalitis agents, viral hepatitis B and C agents, HIV/AIDS); mechanical factors (working with work equipment, hazardous equipment, work at high elevations, working in explosive environments); ergonomic factors (work in forced body position, uniform movements, moving heavy objects); psycho – social factors (lack of time, overtime, work at night, poor relations with management, colleagues, conflicts) (Fu et al., 2009). The working environment cannot be maintained absolutely without the impact of risk factors. Their reduction and control is the responsibility of each employer while the selection and implementation of preventive measures must be assessed by assessing the magnitude of the occupational risk, the financial capacity of the company and the suitability of the relevant measures of specific activities in the respective enterprise/institution locally and globally. Full control and reduction of risk factors to acceptable levels is only possible if the employers, their responsible persons as well as the employees are aware of the nature of the work environment risk factors and are able to predict their possible consequences (Seyoum, 2004). This is essential for maintaining the safe working conditions and increase the production levels for local and global economic profits (Dong et al., 2007). According to the Labor Protection Law of Latvia, the preventive measures are understood as actions or measures taken or planned in the enterprise at all stages of work to prevent or reduce the working environment risks. The aim of these measures is to create a safe and healthy working environment and to prevent accidents at work and occupational diseases and increase the local and global productivity (Latvian Ministry of Welfare, 2007). In fact, construction is especially considered one of the most important and yet one of the most dangerous sectors from the standpoint of the International Labor Protection as the employees there more often than in Latvia on average suffer from work accidents and occupational diseases. It also involves many aspects, but as the most important ones should mention those numerous, diverse and international work environment risk factors that are met at every construction site, employees of different professions and different levels of vocational training, uncoordinated or inadequately coordinated activities of more subcontractors, as well as lack of time (Akhvlediani & Sledziewska 2015). However, the underlying reason is insufficient understanding of labor protection issues; by employers, employees and customers (Riga Stradins University, 2011).

2. Analysis of Accidents in Construction

According to the European Union, the construction sector has the highest risk of accidents; more than 1.300 people die every year in construction accidents. Construction workers world – wide face a threefold higher risk of death and a double risk of injury than workers of other occupations (European Agency for Safety and Health at Work, 2017). Every year more than a thousand accidents are registered in Latvia where employees are either traumatized or killed (Riga Stradins University, 2010). It is demonstrated descriptively in Tab.1, which compares

the total number of accidents in Latvia with the number of accidents in the construction industry in chronological order.

Table 1: Statistics of number of accidents in the Latvian construction industry 2009 – 2016

	2009	2010	2011	2012	2013	2014	2015	2016	Total
Accidents at work									
Total in country	1.203	1.232	1.397	1.545	1.748	1.763	1.712	1.846	12.446
Construction	120	102	138	174	157	149	122	124	1.086
%	10	8	10	11	9	8	7	6,7	8,7
including: grave accidents at work									
Total in country	175	175	196	219	230	213	166	184	1.558
Construction	37	27	30	41	45	42	22	39	283
%	21	15	15	19	20	20	13	21	20,7
lethal accidents at work									
Total in country	32	25	34	35	31	41	41	38	277
Construction	7	5	10	11	3	5	2	5	48
%	22	20	29	31	10	12	5	13	17,3

Source: (State Labour Inspectorate, 2016)

Accidents frequently result in persistent incapacity for work and severe health problems. As a result many of these workers are no longer able to perform the same tasks they did before the accident (Wacher & Yorio, 2014). The consequences of accidents affect the employees, but employers as well. Accidents cause substantial damages and become challenges for the company to operate successfully locally and globally (Riga Stradins University, 2010). Additional menacing consequences are lowering their reputation and their production efficiency that affect them locally and globally (Fong et al., 1999). According to the State Labor Inspection data, the following are the primary sources of construction accidents. Occupational safety regulations were not observed – 33% of all accidents in the construction sector. Insufficient management in the performance of duties – 24%. Unsatisfactory staff training – 6%. Deficiencies in work management, insufficient control – 6%; use of unacceptable or inappropriate working methods – 6%; no security equipment or personal protective equipment has been used – 4% (State Labor Inspectorate, 2016). After analyzing the sources of particular accidents, it is evident that accident prevention will not require big investments. A large quantity of accidents occur not only due to dangerous and inappropriate working conditions, but also due to non-compliance with or negligence of elementary requirements (Dong, Haile, Men, Miller, Waehrer, 2007). The registration and investigation of accidents is very important for both employers, employees and especially the state. In fact, it enables employees to recover after an accident. It is pertinent for the employers to evaluate the sources, identify the individuals responsible and to take proper actions to prevent future accidents. At the national level analyzing the frequent sources of accidents and to identify the most dangerous sectors by improving the labor protection requirements or providing the additional support, thereby reducing the costs of accidents (Dong, Haile, Men, Miller, Waehrer, 2007). At the national and international levels, it is also important for the employees to restore their health as much as possible and continue working instead of receiving disability benefits (Riga Stradins University, 2010).

3. Reduction of Work Environment Risks Caused by Ergonomic Factors

The physical (bio–mechanical) factor appears to be one of the most vital factors while assessing the work environment risks at construction sites. Considering the results of the survey and analyzing the movements of the employees during their activity at the construction

sites, the primary problems that course frequent injuries are lifting and moving very heavy loads. First of all, bending forward with a curved back causes the compression of the front part of the inter–vertebral disc and stretching of the rear (the thinnest) part of the disc. It can cause substantial damage to its structure (Fong, Naoum, Sawacha, 1999). The same risk relates to an excessive rate of bending forward due to the extension of the back ligaments. Substantial risk to disks and ligaments occurs while turning and bending the body. It results in damage to the disk caused by both front and side compression of the disk and extension of the opposite side. Second of all, keeping the weight on the shoulder joint while bending the body back becomes a risk to the disks and is caused by compression of their rear parts, as well as the load on the inter–vertebral joints behind the disks. The further the weight is from the body (at constant weight value), the greater the pressure is on the inter–vertebral disks. Furthermore, standing on knees or squatting (with rounded back), especially for long period of time without adequate protective equipment and without resting periods in different poses, a significant load is applied not only on the joints, but also on the muscles and the heart. Currently, there is no European norm to determine precisely the normal and safe weight, but it is possible to identify a recommended safe weight limit. To prevent these specific injuries, the weight should be measured, the frequency of lifting and the distance of the carried weight and size. These are vital factors to implement in order to reduce disabilities' benefits costs and replacement of workers. The high frequency of these injuries will cause the decline in the local and global productions. After the identification and assessment of risks, it is important to determine and implement the most efficient improvements to minimize and prevent these risks. Implementing efficient measures can reduce the consequences of possible traumatic effects of work environment risks. The most efficient way to reduce disorders of the musculoskeletal system is to avoid manual lifting and relocation of weights. In fact, it is possible to provide lifting equipment such as cranes for such jobs. The approximate cost of such installation is approximately EUR 400 that would compensate the reduction in time required for the work to be carried out since the worker would not need the rest breaks after the transfer of weight. Using such a device would only slightly increase the cost of the workplace organization but reduce the spending on disabilities' benefits and replacement of workers and increase the working and production efficiency locally and globally (Robertson et al., 2016). If load lifting and moving mechanisms are not available, then it is necessary to follow the correct lifting and moving principles when lifting manually. Moving the weights manually also involves other body parts such as muscles, joints and ligaments. When moving the weights, it is strongly advised to do it by keeping the weight close to own body, at the height between elbows and fingers, thus reducing the tension in the area of the sacral bone. Additional safety features must also be implemented. For instance, before lifting heavy objects, it should be certain that the lifted load has no sharp corners, slippery surface, as well as other possible risks that may affect the lifting. Understand the acceptable weight lifting rate (which should not be exceeded) must also be considered and seek help when necessary. If possible, split the load and reduce the lifted weight to make lifting easier. It is essential to be certain that the weight movement path is clear with no obstacles. The following steps should be taken when lifting a weight: stand close to the load feet shoulder width apart, move one foot a little forward and lean on the other one; squat, bending the knees and not the waist, shrink the chin while keeping back as vertical as possible; grasp the load with a firm grip before start lifting; start slow and smooth lifting using your legs. Never turn your back during this step. When lifting is complete, keep the load close to the body as much as possible. If the center of gravity is far from the body, it significantly increases the load on the back and

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increase the risk of injuries. In order to promote safe lifting and carrying procedures, provide employees with personal protective equipment; working gloves with anti–slip coating are required to reduce the possibility of the movable weight to slip out, working boots with anti–slip sole and toe protection. The upper part of the shoes is treated against moisture access. Oil and gasoline resistant, anti–static, non–slip sole of PU2D.

4. Reduction of Psycho – emotional Risks in Work Environment

While assessing the local and global working environment risks at construction sites, one of the most important factors within the working environment are the psycho – emotional risk factors. While conducting this research, the main problems are observed when performing monotonous work where the performed actions are repeated numerous times (Fonget al., 1999). Within studied framework, we implemented the determination of the occupational stress index (OSI) at a specific construction site, (value of 13.5), which means that the employees have a very high stress index (>10), a high physical and psycho–emotional load. It is essential to focus on the preventive measures associated with stress management to prevent the development of damage to the musculoskeletal system. Stressful working conditions can cause serious health problems for the workers such as headache, dizziness, concentration problems, eating disorders, stomach problems, insomnia, irritability, memory impairment, fatigue and several other health disorders. The consequences of stress and the psycho–emotional climate at the workplace are a financial burden for every employer as consequences of stress can lead to a reduced or completely lost ability of the workers that result in reduced productivity. If a new employee must be sought for to replace the existing one, as well as financial expenses for the payment of incapacity compensation to the victim. Therefore, the preventive measures to reduce or fully eliminate the psycho–emotional risks are pertinent for a sustainable development of the company (Seyoum, 2004). The prevention of psycho–emotional risk factors is largely dependent on the organization of the work environment: organization of work schedules and work breaks, interrelations at the workplace and the involvement of the employer in improving the psychological micro–climate. According to the European Survey of Enterprises on New and Emerging Risks (ESENER), 70% of employers recognize that they are concerned about stress in the working environment while 40% of them believe that it is more difficult to deal with the psycho–emotional risk factors than with the traditional work environment risks (such as noise, vibration and lighting.) (Wacher & Yorio, 2014). There are several examples of good world practices how companies are aware of the psycho–social risk involved in the company; measures taken to reduce the high stress level. The most popular measures to reduce stress include: informing and educating the employees about stress management and advice on coping with stress (informative materials, internal newspaper, seminars, training, informative films), consultations with employees, assessment of work and provision of feedback on the accomplishments (mailboxes of ideas, internal competitions), regular provision of information about events in the company and the work tasks (management of the company explains the company development strategy, work tasks, timely informs and provides explanations about the planned changes in the company activity or structure and their necessity, since one of the reasons for the stress is lack of information), organization of working time (more convenient working hours, more suitable work schedule), respect for work and rest regimes and harmonization of family and work life (work breaks), providing employees with lounge rooms where employees can stay and relax during breaks, play games,

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communicate informally, coffee breaks and lunch breaks, joint sports activities (gymnastics during breaks, arrangement of gymnasium, exercise machine (cycling machine) in the lounge room, participation in sports games); provision of free visits to swimming pool or sports activities (for rest after working hours) and organization of joint events for purposes of team – building. (Heizer & Render, 2011). Employees often encounter stress caused by the psycho–emotional risk factors. The following changes will reduce the impact of these factors; conducting monthly surveys of the employees on the psycho–emotional condition and working atmosphere, educating employees on the stress impact and coping with stress (to create message boards with informative materials in the accommodation trailers), conducting regular employee training by the labor protection specialists, and inviting the occupational health physician and relevant specialists.

5. Reduction of Hazardous Chemical Risks in the Working Environment

When assessing the working environment risks at the studied construction site, we discovered frequent problems with the hazardous chemical factors in the working environment. During the site inspection, the employees used hazardous chemicals such as acetone and paint that are not in the compliance within the work safety requirements (Bozarth & Handfield, 2006). According to the risk rating, hazardous substances through inhalation with the risk level 2 need to be provided with exhaust hoods or specially equipped ventilated working surfaces (airflow rate not less than 0.5 m/s). Personal protective equipment is necessary, including the respiratory protective equipment (breathing mask inhalers). Exposure to hazardous substances with the risk level 2 require work clothes, all–face protectors and suitable gloves, incl. disposable. Chemicals can get in the worker's body through the respiratory tract (respiratory way), through the skin (dermal way), through the intestinal tract (digestive way), through the wounds (parenteral way). If chemicals penetrate through the skin, then the symptoms of skin damage may be dry skin, redness and itching. Skin should be covered with squama; otherwise cracked skin as well as ulcers may develop. The human respiratory tract should be mentioned as one of the main pathways for the introduction of chemicals into the human body. Inhalation of chemical dust containing chrome-based salts may result in perforation of the inter-nasal septum. Quartz or asbestos-containing dust can accumulate in the lungs. When chemical substances dissolve in the blood, they can get also enter other organs. The upper respiratory tract mucous membranes and lungs can be damaged by water-soluble gases and vapors and can also cause a dry cough. Chemicals can often interfere with oxygen blood supply which can lead to asphyxia. Furthermore, chemicals can enter through the intestinal tract by accidental swallowing that caused burns. Replacement of chemicals with a safer substances, such as solvent-based paint with safer water-based paint is one of first essential tasks to reduce the risks. Replacing the paints leads to the risk reduction of developing malignant tumors and the risk posed by several other chemicals on the workers' health. It would also benefit not only to the health of the worker, but also to the economic aspects of the company, because water-based paints are cheaper. Thus the worker's exposure to hazard would be reduced when working with chemicals. In order reduce the more of exposure of workers to the impact of chemicals, the right technological processes choice is crucial. If the technical project provides the installation of forced ventilation and the installation of air supply valves, then windows and doors should be painted right after the installation of the ventilation system; providing air supply and exhaust to the premises and creating air exchange that will reduce the chemical substances release during painting

procedures. Minimizing the number of workers involved in the painting process and preventing unauthorized persons from entering during the painting process. It is pertinent for the employees to have the necessary knowledge and skills to work with chemical substances; being familiar with the correct working methods, the composition of chemicals, how the substance can affect the health conditions, the effect of the ventilation system on the concentration of the chemicals in the air, as well the right measure to reduce the risk. (Liu et al. 2017) Before using chemicals, employees must be familiar with the safety data sheets of chemicals used. To prevent exposure to hazardous chemicals and chemical products, it is essential to have proper storage and packaging with a thereon label with a hazard symbol, characterization of chemical's effect, the designation of safety requirements, proper storage of substances and essential chemicals. Storage of obsolete and unclearly identified chemicals are prohibited. The employer must control the collection, sorting, packaging and removal of chemical waste in proper conditions that guarantee employees' safety. To confine hazardous areas and post warning signs in accordance with the requirements of the Cabinet of Ministers Regulation No. 400 of 03 September 2002 "Labor Protection Requirements for Use of Safety Signs", Latvia. Individual protection measures are manifested as the use of personal protective equipment. While painting, the following information on the use of personal protective equipment recommended by the safety data sheet should be used: for respiratory protection, when working with a spray gun it is recommended to wear a face mask with a P3 type filter; for protection of hands, when working with paint for a long time, it is recommended to wear latex protective gloves. Gloves should be changed regularly and as soon as the glove material is damaged; for eye protection against splashes, use protective goggles; for skin protection, if necessary, wear protective clothing (preferably anti – static fabric) and anti – slip protective footwear. Protective clothing of anti – static fabric and protective footwear with anti–slip sole.

6. Conclusions

There are various techniques to reduce and eliminate the impact of the work environment risks by providing proper equipment, effective organization, applying the labor protection measures, ensuring the training of employees, reducing the exposure in hazardous environment, and providing labor protection equipment. The flexibility of the working environment to promote employee diversity as each employee has different abilities, health status, and has its own methods for a particular job. In fact, proper and efficient labor protection system provides workers with safe and healthy conditions at the workplace, reducing the possibility of accidents, preventing the occurrence of occupational diseases, prolonging the labor life, and allowing a full-value rest upon completion of work instead of treating injuries. Construction is considered one of the most dangerous sectors of the economy due to the number of accidents and as occupational diseases exceeds the average in Latvia (in the labor force). The most frequent mistakes occur due to inefficient organization, failure to follow instructions as well as considerable lack of time is observed. The most frequent risk factors are falling objects, falling and slipping, sharp objects and hand injuries. (Robertson et al., 2016) Throughout the European Union, the construction sector has the highest accident risk level, where workers are at risk of dying and at risk of serious injuries. After analyzing the data on accidents during the last eight years, more than 1,000 accidents in Latvia are officially registered each year with an increasing tendency. The main causes of construction accidents include: failure to observe labor safety regulations, inattentive attitude

of the employee when performing of his/her duties, incorrect use of working methods, and failure to use personal protective equipment. When moving heavy weights, the most commonly observed body position of the worker is slight leaning, small turns, weight close to the body and long travel distance. The most efficient way to reduce the musculoskeletal disorders is to avoid manual lifting and movement of weights. Transfer heavy weights with a load transfer cart. In order to promote safe lifting, provide personal protective equipment. Stressful conditions can cause psycho–emotional risks and serious problems such as headache, dizziness, concentration problems, eating disorders, stomach problems, insomnia, irritability, memory impairment, fatigue and other health disorders. (Liu et al., 2017) It is therefore pertinent to conduct employees' survey once a month to ensure information and education of employees about the impact of stress and its coping and to conduct regularly employee training. Reduce the hazardous chemical risks of work environment and the replacing them safer substances. Applying the solvent-based paints are replaced with water-based paints. Personal protective equipment (face mask with P3 type filter, protective goggles and latex gloves) should be used when carrying out painting works.

Acknowledgements

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