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C O N T E N T S

O B S A H

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ANALYSIS OF THE PILLARS OF THE KNOWLEDGE ECONOMY IN THE COUNTRIES OF THE VISEGRAD FOUR

ANALÝZA PILIEROV ZNALOSTNEJ EKONOMIKY V KRAJINÁCH VYŠEHRADSKEJ ŠTVORKY

Abstract: The paper is focused on the topic of knowledge economy in the Visegrad four countries; Slovak Republic, Hungary, Poland and Czech Republic. The aim of this paper is to identify the factors of the main pillars of the knowledge economy that influence the formation of the level of the knowledge economy and consequently in this context to statistically analyse the most important pillars of the knowledge-based economy in the Visegrad four countries. Data necessary for analysis of level of the knowledge economy were drawn from secondary data of the World Bank through the methodology for knowledge evaluation (Knowledge Assessment Methodology – KAM). Assessment methodology to evaluate performance of knowledge economy of world countries using the basic pillars of the knowledge economy that are the economic and institutional regime, education, innovation system and information and communication technologies. Development of pillars of the knowledge economy are affected by other factors, upon which a regression analysis was conducted. Based on the results of the aforementioned regression analysis proposals for improving the level of forming knowledge-based economy in Visegrad four were developed in two pillars that are information and communication system and innovation system.

Keywords: Knowledge economy, World Bank, Pillars of the knowledge economy, Visegrad four.

Kľúčové slová: Znalostná ekonomika, Svetová banka, Piliere znalostnej ekonomiky, Krajiny V4.

Introduction

Knowledge-based economy means a new stage in the development of society, the essence of which is sustainable economic growth that is based on information, innovation and knowledge. Sustainability here is understood in all its dimensions that are environmental, institutional, economic and social dimension [1]. The overall economic development in the EU countries is affected by changes, for example by

the transition from an industrial society to an information society, economic crisis and so on [2].

EU countries are significantly lagging in building a knowledge-based economy behind the US where gross domestic product is growing consequence of the application of the knowledge economy. Knowledge-based economy in the EU has become a dominant theme of economic debates at the beginning of the 21st century.

As the first important milestone is considered March 2000 when the Lisbon Strategy was adopted at the European Council. Its main objective was to build an advanced, dynamic and competitive knowledge based economy in the EU countries [3].

The aim of this paper is to identify factors of pillars of the knowledge economy, which affect the overall development of the knowledge economy in V4 countries (Czech Republic, Hungary, Poland, Slovak Republic), to determine the most important and the least developed pillar of the knowledge – based economy in the V4 and consequently to propose measures to improve knowledge-based economy.

Materials and methods

To identify factors affecting the basic pillars of the knowledge economy multiple regression analysis were realized. Sources for this analysis consisted of secondary data drawn from the World Bank.

Knowledge Assessment Methodology (KAM) is considered an interactive benchmarking tool created by the World Bank called – *Knowledge for development*. This program helps countries to identify the challenges and opportunities they face in making the transition to the knowledge-based economy [4].

Under this program, development of the knowledge economy is assessed and compared in 146 countries through 148 structural and qualitative variables. The aim of the program is to quantify the proportion of the variables within the framework of the four pillars of the knowledge economy, that are the economic and institutional regime, education, innovation mode, and information and communication technologies [5].

For calculation of the knowledge economy index (KEI) and the Knowledge Index (KI) each pillar of the knowledge economy is represented by three key variables.

In the case of education these variables are – adult literacy rate, the ratio of high school students, the ratio of university students.

In the case of information and communication technologies these variables are – the number of telephones per thousand inhabitants, the number of personal computers per thousand inhabitants and the number of Internet users per ten thousands inhabitants.

In the case of innovation system these variables are - royalties and encashments, number of patents and the number of articles in scientific and technological journals.

In the case of economic and institutional regime these variables are – tariff and non-tariff barriers, regulation and legislation [6].

The overall level of the pillars of the knowledge economy is evaluated in a comprehensive scale, from 0 to 10. The worst score of achieved results shows 0, and conversely, the best score of achieved results shows 10 [7]. Within the knowledge

assessment methodology (KAM) a comprehensive indicator is constructed, and that is Knowledge Economy Index (KEI), which includes the main pillars of the knowledge economy. The second indicator of knowledge is the Knowledge Index (KI), which does not include all four main pillars, but only education, innovations and information and communication Technologies [8].

Results and discussion
When analyzing the pillars of the knowledge economy in the V4, there has been conducted multiple regression analysis, through which were determined the statistically most significant factors of particular pillars of the knowledge economy in the V4 countries [9].
Hypotheses needed to analyze the pillars of the knowledge economy were formulated by the specified question.

Question:
1. Which of the factors in the particular pillars of the knowledge economy has the most significant effect on the development of a knowledge-based economy in the selected countries?

Hypotheses:
H1: We assume that economic freedom is the strongest factor in the pillar of economic and institutional regime in the selected countries.
H2: We assume that the applications for a secondary schools is the strongest factor in education pillar in the selected countries.
H3: We assume that the use of the Internet is the strongest factor in the pillar of the information-communication mode in the selected countries.
H4: We assume that the amount of fees for use of intellectual property is the strongest factor in the pillar of innovation mode in the selected countries.

The development of knowledge-based economy in the EU is making significant progress with the help of information and communication technologies (ICT), which is due to the overall speed of creation and dissemination of knowledge based on the increased accessibility of ICT [10].
Industry and investment in science and research are considered to be the core of the overall development of the knowledge economy in the EU [11].
Regression analysis examines the functional relationship, that is, the running of dependency by which varies dependent variable Y according to changes of the independent variables x_i. Multiple regression analysis examines the effect of two or more independent variables on one dependent variable.
In order to prove specified hypotheses we defined dependent variables, which in this case are the particular pillars of the knowledge economy, and independent variables. Independent variables for the pillar of economic and institutional regime are: regulatory quality, rules of law and economic freedom. Independent variables for the pillar of education are: the average number of years in school, enrollment for secondary schools and enrollment for colleges and universities. Independent variables for the pillar of innovation mode are: patents, scientific and technological

journal articles and fees for the use of intellectual property (income). Independent variables for the pillar of information and communication technology are: the number of telephones per 100 inhabitants, the number of Internet users per 100 inhabitants and the number of computer users per 100 inhabitants.

Table 1 shows the results of regression analysis of factors affecting the pillar of economic and institutional regime in V4 countries.

On the basis of achieved the results we reject H1. Economic freedom is not the most important factor of the pillar of economic and institutional regime, because its p value is greater than 0,05; and therefore there does not exist statistically significant relationship between the factor and the pillar. The most important factors of the pillar in V4 countries is a regulatory quality, which has the lowest p value 0,0001; which means that p value is less than 0,05; and therefore, it is statistically most significant factor.

The coefficient of determination is equal to 0,960425; which means that the calculated model explains 96,04% of the variability of dependent variable (pillar of economic and institutional regime). Thus we can say that this is a high statistical correlation between variables.

The coefficient shown in Table 1 specifies the above mentioned estimates of the model, which we determined from performed regression analysis. We wrote the coefficient into the equation of the estimated model, which means:

Equation of estimated model for economic and institutional regime in V4 countries:
Economic and institutional regime = 1,556 + 0,22 * Rule of law$_i$ + 0,073 * Quality of regulation$_i$ - 0,14 * Economic freedom$_i$ + u$_i$

If factor of the rule of law in V4 countries increases by one unit, then the pillar of economic and institutional regime will increase by 22%. If factor of regulatory quality increases by one unit, pillar of economic and institutional regime will increase by 7,3%. If factor of economic freedom increases by one unit, pillar of economic and institutional regime will fall by 14%.

On the basis of the results obtained from regression analysis, there were found changes in the particular pillars of the knowledge economy, which were caused by the development of the economy in the V4 countries.

Table 1: Regression analysis of the pillar of economic and institutional regime in V4 countries

Model	Coefficient	P value	Coefficient of determination
(Constant)	1,556	0,051	0,960425
Rule of law	,022	0,024	
Quality of regulation	,073	0,0001	
economic freedom	-,014	0,397	

Source: own processing

In the pillar of education we performed a regression analysis based on the effect of particular factors. From Table 2 we find that a statistically significant factor for the pillar of education is enrollment for colleges and universities, because its p value is less than 0,05, which is statistically significant relationship between the factor and the pillar. On the basis of achieved results we reject H2, because achieving value of factor of enrollment in secondary schools is higher than 0,05, which means that the factor is not statistically significant for the pillar of education in V4 countries. From the results of regression analysis we can compare the statistical significance of particular factors influencing the pillar in the sample of selected countries. Factor of enrollment for colleges and universities and factor of the average number of years in school are considered to be statistically significant factors in V4 countries.

The coefficient of determination from regression analysis is equal to 0,95604; representing 95,604% of the variability of dependent variable (education), and independent variables of this pillar (enrollment for secondary schools, enrollment for colleges and universities and the average number of years in school). We can say that there is a high statistical correlation between variables.

Equation of estimated model for the pillar of education in V4 countries:
Education = 0,075 + 0,01 * Enrollment for secondary schools$_i$ + 0,036 * Enrollment for colleges and universities$_i$ + 0,472 * Number of years in school$_i$ + u_i

On the basis of the coefficients of the estimated model in selected countries, we can say that if factor of enrollment for secondary schools increases by one unit, then the pillar of education will increas by 1%. If factor of enrollment for colleges and universities increases by one unit, pillar of education will increase by 3,6%. If you factor of the average number of years in school increases by one unit, pillar of education will increase by 47,2%.

Table 2: Regression analysis of education in V4 countries

	Coefficient	P value	Coefficient of determination
(Constant)	-,075	0,960	0,95604
Enrollment for secondary scholls	,001	0,568	
Enrollment for colleges and universities	,036	0,00002	
The average number of years in scholl	,472	0,001	

Source: own processing

The results of the regression analysis of the selected sample of countries in case of pillar of information and communication technologies shows that statistically the most important factor for the pillar is the number of Internet users per

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100 inhabitants, because the p value is 0,00000001; which means that it is less than 0,05; and thus between the particular factors and the pillar is statistically the most important relationship. We therefore accept H3.The results of the regression analysis shows Table 3.

The coefficient of determination is equal to 0,839333; representing 83,93% of the variability of dependent variable, which in this case is the pillar of the information and communication technologies and between its the independent variables and therefore factor of the number of Internet users, the factor of the number of mobile users and factor the number of computer users is a statistically significant relationship.

Equation of estimated model for the pillar of the information and communication technologies in V4 countries:
The information and communication technologies = 0,353 + 0,075 * Internet$_i$ + 0,13 * Telephone$_i$ + 0,13 * Computer$_i$ + u$_i$

The coefficients of Table 3 show that if the factor of the number of Internet users per 100 inhabitants increases by one unit, then pillar of information and communication technologies will increase by 7,5%. If factor of the number of phone users per 100 inhabitants and factor of the number of computer users increase by one unit, then pillar of information and communication technologies will increase by 13%.

Table 3: Regression analysis of the pillar of information and communication technologies in V4 countries

	Coefficient	P value	Coefficient of determination
(Constant)	-,353	0,653	0,839333
Number of internet users	,075	0,00000001	
Number of telephone users	,013	0,24	
Number of computer users	,013	0,150	

Source: own processing

Regression analysis was performed also in the fourth fundamental pillar of a knowledge-based economy, i. e. the innovation pillar regime. The results obtained from the performed regression analysis illustrates Table 4, where we can see the most important factor. The factor the amount of fees for use of intellectual property has a p value of 0,12; which is higher than 0,05; and therefore we can say that this factor is not statistically significant for the innovation pillar regime in the selected countries. We therefore reject H4. None of the analyzed factors of the pillar of the innovation system is statistically most significant factor, because the p value is higher than 0,05.

The coefficient of determination is equal to 0,4560; representing 45,60% variability of the dependent variable (innovation mode) and its independent variables (scientific and technological journal articles, patents and fees for the use of intellectual property).

Equation of estimated model for innovation regime in V4 countries:
Innovation regime = 6,574 + 0,00008 * Patents$_i$ – 0,00006 * Scientific and technological journal articles$_i$ + 0,0000000001 * Fees$_i$ +u$_i$

With help of coefficients obtained from particular factors we can say that if the factor of scientific and technological journal articles grows by one unit, then the innovation pillar regime will increase by 0,008%, which means that the factor does not affect the development of the pillar. If patents factor increases by one unit, the innovation pillar will drop by 0,006%, which means that the factor does not constitute a threat to the further development of the innovation pillar. The factor of the amount of fees for use of intellectual property has no effect on the development of the pillar, because if it increase by one unit, the pillar grows by 0,000001%, which is not even one percent.

Table 4: Regression analysis of the pillar of the innovation system in V4 countries

	Coefficient	P value	Coefficient of determination
(Constant)	6,574	0,000002	0,4560
science and technology papers	0,00008	0,154	
Patents	-0,00006	0,383	
fees for use of intellectual property	0,0000001	0,12	

Source: own processing

From performed regression analysis and the results obtained, we found that statistically the most important pillars of the knowledge economy are considered to be the pillar of economic and institutional regime and the pillar of education, because their p value is less than 0,05; and their determination coefficients represent 96% and 95%, a statistically significant relationship.
Significant impact on these pillars has the GDP growth in the V4 and an increase in the number of applicants for colleges and universities.
Number of Internet and mobile phones users is increasing, which positively affects the ICT pillar and its significance has a positive influence on economic growth in countries around the world.
In contrast, the factors of the innovation system have no statistically significant impact on its development, which is mainly due to the low number of patent owners in the countries.

Conclusion

Knowledge-based economy is a new stage in the development of society, the essence of which is sustainable economic growth that is based on knowledge, innovation and know-how. From the results of the regression analysis of the knowledge economy in the V4, we can conclude that the pillar of economic and institutional regime and the pillar of education are statistically the most important pillars of the knowledge economy and consequently they have positive impact on the overall growth of the knowledge economy. The analysis was performed on the basis of particular factors that have effect on the overall growth of the fundamental pillars of the knowledge economy.

Knowledge-based economy in the EU is one of the primary chances for establishing itself on the global markets.

The results of the regression analysis show that the V4 did not achieved sufficient development in two basic and key pillars of the knowledge based economy, i.e. in the pillar of innovation mode and the pillar of information and communication technologies. Based on the results of the regression analysis, we propose:

For the pillar of information and communication technologies:
- to support the development of highly qualified personnel in the field of ICT, through the introduction of individual training required for the overall growth of education in the area,
- to increase investment in research and development, so as to ensure the development and overall growth of the pillar.

For the pillar of innovation mode:
- improving of the functioning of European research and innovation systems,
- facilitating access to European programs,
- removing of the barriers to the introduction of new ideas to the market,
- sufficient financial support to small and medium-sized enterprises.

Súhrn

Príspevok sa venuje analýze pilierov znalostnej ekonomiky v krajinách V4 pomocou sekundárnych údajov čerpaných z údajovej databázy Svetovej banky podľa metodológie hodnotenia znalosti – KAM. Analýza pilierov znalostnej ekonomiky v nami vybraných krajinách bola vykonaná regresnou analýzou, z výsledkov ktorej sa zistili štatisticky najvýznamnejšie a najmenej rozvinuté piliere znalostnej ekonomiky. Následne boli navrhnuté opatrenia pre rozvoj dvoch zo základných pilierov znalostnej ekonomiky (inovačný režim a informačno – komunikačné technológie).

Ekonomika založená na znalostiach pomenúva novú etapu vo vývoji spoločnosti, ktorej podstatou je trvalo udržateľný ekonomický rast, ktorý je založený na vedomostiach, inováciách a poznatkoch.

Z výsledkov regresnej analýzy znalostnej ekonomiky v krajinách V4 môžeme konštatovať, že pilier ekonomický a inštitucionálny režim a pilier vzdelávanie sú štatisticky najvýznamnejšie piliere znalostnej ekonomiky a následne pozitívne vplývajú na celkový rast znalostnej ekonomiky. Analýza bola vykonaná na základe

jednotlivých faktorov, ktoré vplývajú na celkový rast základných pilierov znalostnej ekonomiky.

Znalostná ekonomika v krajinách V4 predstavuje jednu z primárnych možností presadenia sa na svetových globálnych trhoch. Výsledky regresnej analýzy preukazujú, že krajiny V4 nezaznamenali dostatočný rozvoj v dvoch základných a kľúčových pilieroch ekonomiky založenej na znalostiach; a to v pilieri inovačný režim a v pilieri informačno – komunikačné technológie.

Na základe výsledkov regresnej analýzy navrhujeme:

   pre pilier informačno – komunikačné technológie:
   -   podporovať rozvoj vysoko kvalifikovaných pracovníkov v oblasti IKT, za pomoci zavedenia jednotlivých kurzov, potrebných pre celkový rast vzdelania v danej oblasti,
   -   zvýšiť investície do VaV, a tak zabezpečiť jeho rozvoj a celkový rast.

   pre pilier inovačný režim:
   -   skvalitnenie fundovania európskych systémov výskumu a inovácií,
   -   zjednodušenie prístupu k európskym programom,
   -   odstránenie bariér pre uvádzanie nových myšlienok na trh,
   -   dostatočná finančnú podporu malých a stredných podnikov.

References

[1]   VINCÚR, P., FIFEKOVÁ, E. 2010. *Stratégia sociálno-ekonomického rozvoja*. Bratislava. ISBN 978-80-89393-19-0.
[2]   BARÁNIK, M., HABÁNIK, J., 2008. *Základy makroekonómie*. Bratislava: IRIS. ISBN 80-89018-45-9.
[3]   LISABONSKSÁ STRATÉGIA A SLOVENSKO.
      Available: https:// www. Veda technika.sk/SK/Veda a technikaVSR/Stranky/LisabonskastrategiaaSlovensko.aspx [cit. 2016-03-20].
[4]   COLLISON, CH., 2006. *Knowledge managemnet – Zkušenosti významných světových učících se organizací*: CP. ISBN 81-256-0670-5.
[5]   DUDOVÁ, I., 2012. *Ekonómia vzdelávania*. Bratislava: Vydavateľstvo – Ekonóm. ISBN 978-81-226-3117-7.
[6]   THE WORLDBANK. *Knowledge assestment Methodology 2012*. Available: http://web.worldbank.org/WBSITE/EXTERNAL/WBI/WBIPROGRAMS/KF DLP/EXTUNIKAM/0,
      menuPK:1414738~pagePK:64168427~piPK:64168435~theSitePK:1414721,0 0.html. [cit.2016-02-02].
[7]   JEDLIČKOVÁ, Ľ., 2006. *Ľudské zdroje pôsobiace na rozvoj znalostnej ekonomiky*. Nitra Slovenská poľnohospodárska univerzita. ISBN 80-8069-773-6
[8]   KELEMEN, J. et al., 2007. *Pozvanie do znalostnej spoločnosti*. Bratislava: IURA EDITTION. ISBN 978-80-8078-149-1.

[9] LALINSKÝ. T., 2008. *Faktory konkurencieschopnosti slovenských podnikov*. Bratislava: NBS. ISS N 1337-5830

[10] MELIŠEK, I., 2008. *Hospodárska politika Európskej únie*. Bratislava: Sprint. ISBN 978-80-969927-8-2.

[11] OECD 2005. The *Measurement of Scientific and Technological Activities*: Proposed Guidelines for Collecting and Interpeting Technological Innovation Data [online]. Oslo manual, s. 237 [cit. 2015-09-12]. Dostupné z: http://www.oecd.org/sti/inno/237858.pdf.

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CONCEPT OF PUBLIC EXPENDITURE CONSTRAINT: COMPARISON OF VISEGRAD COUNTRIES

KONCEPT OBMEDZOVANIA VEREJNÝCH VÝDAVKOV: KOMPARÁCIA KRAJÍN VYŠEHRADSKEJ ŠTVORKY

Abstract: Power of the public sector expansion is discussed frequently. For this purpose, the size of public sector is usually measured by public expenditure. In this paper, investigation for public expenditure determinants in Visegrad countries is realized. However the economic evolution in those countries was similar regarding to their effort to transit from centrally planned to market economies, obtained results of OLS estimation cannot be generalized over the Visegrad group. Results differ from country to country; the impact and the significance of variables as GDP per capita, fiscal decentralization, country size, foreign direct investments inflation, unemployment and public deficit differ.
Keywords: public sector, public expenditure, Leviathan hypothesis, fiscal decentralization

Kľúčové slová: verejný sektor, verejné výdavky, Leviathanova hypotéza, fiškálna decentralizácia

Introduction

Public sector is an integral part of economic reality almost of all countries all over the world. Public finance as expression of financial flows of public budget revenues and expenditures is discussed at least as public sector. But the connection between them is much simpler. The size of public sector is usually measured using these budget items. According to the available literature the indicator of public expenditure as % of GDP prevails. [10], [12]. But the economic dimension of public expenditure is more extend. This is the more visible category from the government economic activities spectrum. This is it, what the citizens discuss beside the taxes. This is it, what is considered to be constrained. Economic theory provides the large scope of hypothesis focusing on the public expenditure constraint. The most famous of them is the Leviathan hypothesis elaborated by Brennan and Buchanan in 1980 [2] and later tested by Oates [11], [12] or Marlow [10] in the 80´s. it is about the constraining effect of fiscal decentralization on the government size – on the government or public expenditure. But as the current literature mentions, just a little consensus in results was found [5]. Hereby some other determinants were introduced to the Leviathan research, as GDP, openness, public debt, inflation and unemployment rate. Countries taken under the

investigation were mostly developed, however the research of Oates estimated the effect also in developing countries.

In this paper, the former communistic countries of Visegrad group are included to the research. Their transition to marked economies had to introduce a complex public sector, public finance and public administration reforms including fiscal decentralization process.

Assumptions, Methods and Data

Searching for the public expenditures determinants, regression analysis implementing the Ordinary Least Squares (OLS) method was used. Heteroskedasticity Autocorrelation Correction (HAC) covariance matrix was applied to avoid problems with heteroskedasticity and autocorrelation. Standard testing procedure offered by here used program Gretl computes the Durbin Watson test statistics. It is used to detect the presence of autocorrelation with critical values further from 2. Additional tests were after the estimation provided; Breusch-Pagan test for heteroskedasticity null hypothesis – heteroskedasticity not present, is accepted if p – value > 0,05. LM test for autocorrelation up to order 1null hypothesis – no autocorrelation, is accepted if p – value > 0,05 [4].

All data are obtained from the Eurostat Database – Government Finance Statistics [15]. Data are collected for Slovakia, Czech Republic, Hungary and Poland for the period from 1995 to 2014. Calculations were provided by the econometric program Gretl. Variables involved to the estimation are following.

Public expenditure is a dependent variable in the estimation. Total government expenditure or total government spending is a standard measurement for government size variable. The available literature mentions also other indicators for measuring the government size, but the poor consensus was found in the theory. [9] Alternative variables mentioned in the previous investigation are total government tax revenues [11].

Explanatory variables and basic assumptions are:
1. GDP per capita is an explanatory variable with expected positive coefficient sign according to the Wagner´s Law.[8] The share of public expenditure on GDP is increasing on the developed countries.
2. Population or country size control variable positive sign is here expected [1] . Increasing country size measured by its population creates demand for public goods and public services, consequently the public expenditures raises.
3. Tax decentralization is a fiscal decentralization indicator. It is computed as share of local tax revenues on total revenues [7]. Besides this indicator, other indicators of fiscal decentralization are more commonly used [3]. In general, fiscal decentralization is regarded as the main constraint of the extensive public expenditure. Following this assumption, the inverse impact of fiscal decentralization on public expenditure is expected supporting the Leviathan hypothesis. [2], [3].
4. Foreign Direct Investments is indicator expressing the connection and dependence of the economy with other economies. It is an alternative indicator

for the openness of economy defined as sum of all exports and imports of the country. Its expected impact on public expenditures is negative.

5. Misery Index was introduced by A. Okun and later developed by R. Barro [14]. It is defined as a sum of unemployment rate and inflation rate in economy, and its higher values indicate economic instability [7]. The effect of Misery Index on public expenditure is two-tier. First, the positive impact is expected in sense of increasing pressure on stability restoration connected with higher government expenditure [13]. On the other hand, negative impact of misery index on public expenditure is regarded because of the cuts in the revenue side of public budgets in the period of economic depression, which is directly linked with its expenditure side. Government expenditures are thus reduced in effort to save or economize.

6. Public deficit indicator influences public expenditure positively because of the increasing requirements on debt payments financed from public expenditure [6].

The basic OLS regression formula is as following:

$$y_i = \alpha + \beta * x_i + \varepsilon_i \tag{1}$$

where y_i is a dependent variable for country i, α is an intercept, β is a regression coefficient, x_i is explanatory variable and ε_i is an error term.

For the paper purpose applied formula for country i is:

$$PubExp_i = \alpha + \beta_1 * GDPpc_i + \beta_2 * Pop_i + \beta_3 * TaxDec_i +$$
$$+ \beta_4 * FDI_i + \beta_5 * MI_i + \beta_6 * PubDebt_i + \varepsilon_i \tag{2}$$

where *PubExp* is public expenditure, *GDPpc* is GDP per capita, *Pop* is a population, *TaxDec* is a fiscal decentralization indicator, *FDI* are foreign direct investments, *MI* is Misery Index and *PubDebt* is public deficit.

Results
In Slovakia, public expenditures are affected by almost all variables used in the estimation, except of FDI. Adjusted R^2 of the model shows high value and tests omit problems with heteroskedasticity and autocorrelation. Results of the OLS regression for Slovakia are shown in Table 1.

Table 1: Slovakia, OLS estimation results

Model: OLS, HAC, Dependent variable: Public expenditure			
	Coefficient	*p-value*	*Significant at*
Intercept	48,2165	<0,0001	***
GDP per capita	−1031,77	0,0002	***
Population	0,0004	0,0002	***
Tax decentralization	24,1568	0,0003	***
Foreign Direct Investments	−17,6414	0,1551	
Misery Index	−0,2667	0,0296	**
Public debt	−1,0408	0,0003	***
Adjusted R^2	0,930763		
Durbin-Watson test	2,093070		
Breusch-Pagan test for heteroskedasticity p-value = 0,690634			
LM test for autocorrelation up to order 1 p-value = 0,641791			
*** denotes significance at level 0,01, ** at 0,05 and * at 0,1			

Source: Own calculations, Gretl

Assumptions about the Wagner´s Law, fiscal decentralization and public debt are here not supported by observed results. GDP per capita is significant, but public expenditures influences negatively, indicator of fiscal decentralization is significant but its impact is positive and so cannot be considered as constraint to public expenditure, public debt impacts are negative. The variables ´sign are opposite to the theory expectations. Assumptions about the country size, FDI and Misery Index are in accord with the theory. Increase in population causes increase of public expenditure, Misery Index reveals solving the problems in economy by reducing the public spending. FDI variable is not significant, although its sign is negative.

In Czech Republic results differ. Significant are only three variables – fiscal decentralization, Misery Index and Public debt and their impact on public expenditure is negative. Results of the OLS regression for Czech Republic are presented in Table 2.

Table 2: Czech Republic, OLS estimation results

Model: OLS, HAC, Dependent variable: Public expenditure			
	Coefficient	*p-value*	*Significant at*
Intercept	81,5188	0,0224	**
GDP per capita	103,587	0,1978	
Population	−2,9032e-06	0,2931	
Tax decentralization	−22,8187	0,0208	**
Foreign Direct Investments	−12,3762	0,2019	
Misery Index	−0,335852	0,0100	***
Public debt	−0,816431	0,0012	***
Adjusted R^2	0,728461		
Durbin-Watson test	1,549402		
Breusch-Pagan test for heteroskedasticity p-value = 0,180007			
LM test for autocorrelation up to order 1 p-value = 0,930229			
*** denotes significance at level 0,01, ** at 0,05 and * at 0,1			

Source: Own calculations, Gretl

Fiscal decentralization indicator behaves in favour of the Leviathan hypothesis. Increase of Misery Index activates the decrease in public expenditures and public debt causes the reduction of public expenditures. Adjusted R^2 value is high and heteroskedasticity or autocorrelation are not present in the model.

Investigation In the case of Hungary investigation regards on feeble results concerning on significance of variable as country size, fiscal decentralization and FDI. Significant are GDP per capita, Misery Index and public debt. Results of the OLS regression for Hungary are presented in Table 3.

Table 3: Hungary, OLS estimation results

Model: OLS, HAC, Dependent variable: Public expenditure			
	Coefficient	*p-value*	*Significant at*
Intercept	40,6627	<0,0001	***
GDP per capita	308,855	0,0015	***
Population	−5,49238e-07	0,9725	
Tax decentralization	−3,14456	0,3998	
Foreign Direct Investments	−6,53933	0,2165	
Misery Index	0,251961	0,0514	*
Public debt	−0,696099	0,0012	***
Adjusted R^2	0,648733		
Durbin-Watson test	2,306168		
Breusch-Pagan test for heteroskedasticity p-value = 0,498743			
LM test for autocorrelations up to order 1 p-value = 0,802675			
*** denotes significance at level 0,01, ** at 0,05 and * at 0,1			

Source: Own calculations, Gretl

Assumption about the Wagner´s Law is confirmed according to positive relationship between GDP per capita and public expenditure. The increase of GDP per capita causes raise of public expenditure. Impact of Misery index is positive and supports the alternative interpretation of its influence. Public debt impact on public expenditure is again negative, similarly to results of Slovakia and Czech Republic. In the Hungary model, heteroskedasticity and autocorrelation are not present and adjusted R^2 shows high value.

Finally, the Poland model presents many significant effects of chosen variables on public expenditure, but the adjusted R^2 value incites some questions about the appropriate model specification. The model does not suffer from heteroskedasticity and autocorrelation. Results of the OLS regression for Poland are presented in Table 4.

Table 4: Poland, OLS estimation results

Model: OLS, HAC, Dependent variable: Public expenditure			
	Coefficient	*p-value*	*Significant at*
Intercept	199,314	0,0085	***
GDP per capita	−906,096	0,0081	***
Population	−3,82451e-06	0,0324	**
Tax decentralization	9,3878	0,0173	**
Foreign Direct Investments	−61,1454	0,0044	***
Misery Index	−0,19175	0,0408	**
Public debt	−0,1177	0,4298	
Adjusted R^2	0,261853		
Durbin-Watson test	1,901103		
Breusch-Pagan test for heteroskedasticity p-value = 0,563376			
LM test for autocorrelation up to order 1 p-value = 0,568936			
*** denotes significance at level 0,01, ** at 0,05 and * at 0,1			

Source: Own calculations, Gretl

In general, results are opposite to given assumptions. GDP per capita´s impact on public expenditure is negative and resists the Wagner´s Law, Population sign is negative, fiscal decentralization does not mirror the constraint to Leviathan. Satisfying are negative effects of Misery Index and FDI. Public debt is not significant.

Conclusion
The final comparison of the influence of variables in the question on public expenditure and their significance accompanied by the adjusted R^2 values is represented in Table 5.

Table 5 Comparison of public expenditure determinants for V4 countries

	Slovakia	Czech Republic	Hungary	Poland
Intercept	(+)***	(+)***	(+)***	(+)***
GDP per capita	(-)***	(+)	(+)***	(-)***
population	(+)***	(-)	(-)	(-)**
Tax decentralization	(+)***	(-)**	(-)	(+)**
Foreign Direct Investments	(-)	(-)	(-)	(-)***
Misery Index	(-)**	(-)***	(+)*	(-)**
Public deficit	(-)***	(-)***	(-)***	(-)
Adjusted R^2	0,930763	0,728461	0,648733	0,261853

Source: Own calculations, Gretl

The GDP per capita variable is significant in Slovakia, Hungary and Poland, but its influence on public expenditure differs. In Hungary the positive impact supports the Wagner´s Law; in Slovakia and Poland its impact is negative.

Country size measured by its population is significant in case of Slovakia and Poland, but the basic assumption about its positive impact on public expenditure is confirmed only in Slovakia estimation.

Fiscal decentralization measurement concerning local taxes is significant in Slovakia, Czech Republic and Poland, but public expenditures influences mainly positively (in Slovakia and Poland), what is a contrary result with the Leviathan hypothesis. Only the Czech Republic results support the assumption given hereinbefore.

Foreign direct investments effects the dependent variable inversely in accord with a theory, but this variable is significant only in case of Poland.

Misery index is significant in all Visegrad countries, but its results are not uniform, what confirms the disruption in expected effects.

Public deficit influences negatively the public expenditure in all Visegrad countries. This variable is significant in Slovakia, Czech Republic and Hungary, in Poland does not satisfy the significance condition level.

Summary

Searching for the appropriate level of public expenditure is regarded as utopian goal, but searching for the public expenditure constraints is an object of many studies. Research focusing on public expenditure and thus on government size has not uniform results. The aim of this paper is to investigate for public expenditure determinants in case of Visegrad countries. Obtained results of the OLS regressions for each of Visegrad countries regard on some common tendencies in determining the public expenditure. Inversely, in some cases, results differ or are not clear. The Wagner´s Law about positive influence of GDP per capita on public expenditures in developed countries is confirmed only in case of Hungary. Country size indicator is significant only in half of estimations and furthermore its impact differs. Indicator of

fiscal decentralization is a significant determinant of public expenditure in the better part of the sample, but the Leviathan hypothesis is supported only by the Czech Republic results. Foreign direct investments affect public expenditures in accord with given assumptions, but this variable is significant only in case of Poland. Misery Index is regarded as important determinant of public expenditure, but its impact varies according to country. Public deficit influences negatively the public expenditure in all Visegrad countries, insignificant is only in Poland.

Súhrn
Bádanie po prijateľnej výške verejných výdavkov sa javí ako utopistické, ale bádanie po obmedzeniach verejných výdavkov je objektom mnohých štúdií. Výskum zameraný na verejné výdavky a teda aj veľkosť verejného sektora však nemá jednotné výsledky. Cieľom tohto článku je hľadať determinanty verejných výdavkov v krajinách Vyšehradskej štvorky. Výsledky dosiahnuté prostredníctvom OLS regresií pre každú z krajín Vyšehradskej štvorky poukazujú na niektoré spoločné tendencie v determinovaní verejných výdavkov. Ale aj naopak, v niektorých prípadoch sa výsledky rôznia alebo sú nejednoznačné. Wagnerovo pravidlo o pozitívnom vplyve HDP na obyvateľa na verejné výdavky v rozvinutých krajinách podporili len výsledky Maďarska. Indikátor veľkosti krajiny je významný len pre polovicu odhadov a jeho vplyv na verejné výdavky sa navyše rôzni. Indikátor fiškálnej decentralizácie je vo väčšine prípadov významným determinantom verejných výdavkov ale Leviathanova hypotéza je potvrdená len v prípade Českej republiky. Index mizérie sa javí ako významný determinant, ale jeho vplyvy sa pre jednotlivé krajiny rôznia. Priame zahraničné investície ovplyvňujú verejné výdavky v súlade s predpokladmi, ale významnosť je dostatočná len pre Poľsko. Verejný dlh ovplyvňuje verejné výdavky negatívne vo všetkých krajinách Vyšehradskej štvorky, nevýznamný je len pre Poľsku.

References

[1]   ASHWORTH, J., GALLI, E., PADPVANO, F. (2012). Decentralization as a constraint to the Leviathan: A panel cointegration analysis. *Public Choice*. http://link.springer.com/article/10.1007%2Fs11127-012-9962-8#/page-1, doi: 10.1007/s11127-012-9962-8

[2]   BRENNAN, G., and BUCHANAN, J. (1980). *The Power to Tax: Analytical Foundations of a Fiscal Constitution*. New York: Cambridge University Press.

[3]   CROWLEY, G.R., SOBEL, R.S. (2011). Does Fiscal Decentralization constrain Leviathan? New evidence from local property tax competition, *Public Choice* 149, 5-30, doi 10.1007/s11127-011-9826-7

[4]   GAZDA, V. (2009) Gretl- vhodná alternatíva programu na ekonometrické výpočty v podmienkach vysokých škôl 2009.In: *Ekonomické spektrum*. Roč. 4, č. 2 (2009), s. 9-12. - ISSN 1336-9105

[5]   GOLEM, S. (2010). Fiscal Decentralization and the Size of Government: *A Review of the Empirical Literature, Finance Theory and Practice*, 34(1).

[6]   HORVÁTHOVÁ, L., GAZDA, V., HORVÁTH, J., KUBÁK, M. (2012). Fiscal Decentralization and Public Debt in the European Union. In: *Lex*

Localis: Journal of Local Self-Government. Vol. 10, no. 3 (2012), p. 265-276. - ISSN 1581-5374, doi: 10.4335/10.3.265-276(2012)

[7]   HORVÁTHOVÁ, L. (2012) Cluster analysis of chosen countries according to their macroeconomics indicators. In: *Journal of Management and Business: Research and Practice*. Roč. 4, č. 1 (2012), s. 15-22. - ISSN 1338-0494

[8]   LAMARTINA, S., ZAGHINI, A. (2008) Increasing Public Expenditures: Wagner´s law in OECD Countries, [online] available at http://campus.usal.es/~XVEEP/PAPERS/J1S6/XVEEP-29%20LAMARTINA-ZAGHINI.pdf

[9]   LESSMAN, CH. (2006) Fiscal Decentralization and Regional Disparity: A Panel Data Approach for OECD Countries, Ifo Working Paper No.25, 2006, [online] www.repec.org

[10]   MARLOW, L. (1988) Fiscal Decentralization and Government Size. *Public Choice* 56, 259-269

[11]   OATES, W. E. (1985). Searching for leviathan: an empirical study. *The American Economic Review* 75(4) 748-757.

[12]   OATES, W. E. (1989). Searching for Leviathan: A reply and some further reflections, *The American Economic Review* 79. 578–583

[13]   SINIČÁKOVÁ, M., ŠULIKOVÁ, V., HORVÁTH, J., GAZDA, V., GRÓF, M. (2011). Behaviour of inflation within V4 countries. In: *International Research Journal of Finance and Economics*. No. 70 (2011), p. 59-67. - ISSN 1450-2887

[14]   ROBERT BARRO BIOGRAPHY. Harvard University Department Of Economics. [online] http://www.economics.harvard.edu/faculty/barro/bio

[15]   EUROSTAT, Government statistics, http://epp.eurostat.ec.europa.eu/

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Viktória Ali Taha

ORGANISATIONAL AND CULTURAL FACTORS
OF EMPLOYEE ENGAGEMENT IN SLOVAK HEALTH SECTOR

ORGANIZAČNÉ A KULTÚRNE FAKTORY ANGAŽOVANOSTI
ZAMESTNANCOV V SLOVENSKOM ZDRAVOTNÍCTVE

Abstract: The employee engagement concept/approach has become increasingly important due to its evident correlation to organization's success, productivity, performance, effectiveness, competitiveness and innovativeness. Organisations worldwide are taking a more active stance in strengthening and increasing employee engagement in order to ensure employees' emotional commitment to the organisation and its values and exploit employees' passion and expertise to achieve organisational goals. This approach is extremely important in healthcare context due to its significant impact on the quality of healthcare services as well as the overall patient/client experience, satisfaction and safety. The aim of this study is based on the analysis of primary data to understand, examine and measure the employees' engagement level in Slovak health(care) organizations. Using correlation analysis it has also been found that there is a correlation between organizational/cultural settings and engagement level of employees in health(care) sector.

Keywords: employee engagement, culture, healthcare, management

Kľúčové slová: angažovanosť zamestnancov, kultúra, zdravotníctvo, manažment

JEL: A22, I23

Introduction

Employee engagement is now recognised as a key issue for organisations. Many researches and studies have shown the impact of engagement on organisation performance (enhancement), success, profit, productivity, reputation, quality of services, and innovation. Engaged employees are very closely connected to, passionate about and absorbed in their work, they consider their jobs meaningful and challenging, they have high involvement in their work as well as strong enthusiasm and sense of achievement, they are prepared to work hard and go above and beyond in order to contribute to the success of the organization, and they are happy and looking forward to coming to work every day. This of course affects the employee loyalty productivity and job performance.

The employee engagement approach

Employee engagement is "the degree to which employees are involved in and enthusiastic about their work and workplace" [6]. Work engagement is defined by Schaufeli et al. as "a positive, fulfilling work-related state of mind that is characterised by *vigour* (i.e. high levels of energy and mental resilience, willingness to invest effort in one's work and persistence even in the face of difficulties),

dedication (i.e. a sense of significance, enthusiasm, inspiration, pride and challenge) and *absorption* (i.e. being fully concentrated and deeply engrossed in one's work)" [7].

Kahn in in his pioneering study "Psychological conditions of personal engagement and disengagement at work" defines personal engagement as "the simultaneous employment and expression of a person's "preferred self" in task behaviours that promote connections to work and to others, personal presence (physical, cognitive, and emotional), and active, full role performances" [12]. According Gallup engaged employees are "passionate, creative, and entrepreneurial, and their enthusiasm fuels growth. These employees are emotionally connected to the mission and purpose of their work" [6]. Moreover, engaged people "are motivated to go above and beyond the minimum of what is required of them, find enjoyment in the work that they do, and have a passion for excellence" [18, p. 72].

Engaged employees: (1) feel personally and emotionally bound to the organisation; (2) take pride in recommending the organisation as a good place to work; (3) are attached to the intrinsic rewards of working at the organisation instead of the compensation; (4) feel a close attachment to the organisation's purpose [15]; (5) are involved - they are part of the programme not recipients of it; (6) are proactive i.e. they understand the goals, culture and values of the organisation so they make suggestions or take initiative (even innovate) for the greater good, without being asked; (7) are energised - have correspondingly high energy levels; (8) are "achievers" - they tend to be focused and, therefore, more productive due to enhanced levels of understanding, clear goals and boundaries, an appropriate mix of support and challenge [3].

There are three *psychological conditions* that influence people's personal engagement and together shape how people inhabit their roles:

1. *Psychological meaningfulness:* a feeling that one is receiving a return on investments of one's self in a currency of physical, cognitive and emotional energy, a feeling to be worthwhile, useful, and valuable.
2. *Safety:* a feeling able to show and employ one's self without fear of negative consequences to self-image, status, or career.
3. *Psychological availability:* is the sense of having the physical, emotional or psychological resources to personally engage at a particular moment [12].

According Chartered Institute of Personnel and Development (CIPD) "people can be engaged at different levels and with various aspects of the organisation or the work and their engagement can be transactional or emotional in nature", while:
-   *transactional engagement:* kind of engagement in which individuals fulfil basic expectations in terms of getting the job done and looking after the interests of the organisation. The reason is that they believe this is what the organisation expects and this is what they need to do to stay employed or be promoted to the next level;
-   *emotional engagement:* form of engagement which is more deep-seated and occurs when people really identify with their work and are motivated by the desire to do a good job or do the right thing [10].

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As states Global Employment Engagement Index 2012, there are different ways in different countries how to make employees to be engaged and motivated – it depends on the culture, religion, sociological character, economy, lifestyle and other factors. Employee engagement is a combination of affective commitment and intrinsic motivation [20].

Factors influencing employee engagement
Engagement is influenced by many factors such as workplace culture, organizational communication and managerial styles, leadership, company reputation, access to training and career opportunities, work/life balance and empowerment to make decisions [19]. Sirisetti defines factors which are important in engaging employees as follows:

- organisational culture in which people know their work matters and their contributions to the organization's goals are valued,
- interesting/challenging work,
- good rapport/interactions with co-workers/colleagues/managers,
- opportunities for professional growth and development,
- receiving regular, balanced feedback from managers (redirect and reinforcing),
- clear objectives and expectations,
- meaningful recognition, being valued and respected,
- receiving fair pay [18].

The model of Employee Engagement Inter-jurisdictional Team (EEIT) contains these factors of employee engagement:

- co-worker relationships,
- the quality of service provided,
- job fit,
- work-life balance,
- senior leadership practices,
- direct supervisory practices,
- learning and development opportunities [8].

Some authors perceive engagement factors in two dimensions and distinguish between individual and organizational factors of employee engagement, where:
1. *Individual factors*:
    - employee communication,
    - employee development,
    - co-employees support.
2. *Organisational factors*:
    - image of the organisation,
    - rewards and recognition,
    - leadership [16].

DecisionWise – consulting company providing talent management solutions to organizations and conducting survey, researches and analyses has found that there

are five keys (MAGIC) that drive employee engagement. One question as a direct measure and three supporting questions are designed to measure each of the five MAGIC and determine which of the five keys is driving or inhibiting engagement. The MAGIC keys are:

- *Meaning:* Do employees find meaning and purpose in their jobs? Does their work make a difference for others?
- *Autonomy:* Do employees have freedom, self-governance, and an ability to make choices about their work?
- *Growth:* Does the job provide development and growth opportunities. Does the work challenge and stretch employees to grow and improve?
- *Impact:* Do employees feel like they are successful in their work? Do they see that their effort makes a difference and contributes to the success of the organization?
- *Connection:* Do employees have a personal connection with the people they work with, their boss, and the social community of the workplace [4]?

An important determinant of employee engagement is strong/healthy *organizational culture*. As stated Denison Consulting, for achieving improved performance and overall effectiveness is necessary not to look at employee engagement in isolation – important is to understand of the organizational context and culture the employees work within. It is the combination of a healthy culture and engaged employees that is "most critical to improving organization's effectiveness and the experiences of the people in it" [5, p. 4]. That is why "organizational leaders need to create an inspiring vision for the future and foster a purposeful culture that makes engagement a core driver of business results" [20, p. 54]. Organisational cultures characterized by such characteristics as teamwork, pleasant working conditions, appropriate treatment of employees, growth opportunities, skill enhancement and abundant training opportunities are those contribute to and increase the employee engagement [17].

Employee engagement in a healthcare context
Bonias et al. define clinical engagement as „the cognitive, emotional and physical contribution of health professionals to their jobs, and to improving their organisation and their health system within their working roles in their employing health service" [2, p. 378].
Kevin Kruse considers healthcare to be still a people-intensive business - despite advances in medical technology and stresses the need of investment in human capital - specifically, on employee engagement. Author emphasizes the role of managers arguing that „engagement has very little to do with employee appreciation picnics, compensation, or parties. It has everything to do with who your manager is, and how she is helping you to grow, to feel appreciated and to trust that the organization has a great future" [14].
Employee engagement in the health sector can be examined on several levels. Many studies investigated the engagement by concentrating on a select group of healthcare employees – managers, doctors, nurses or other categories. For example, Gallup - American research-based, global management consulting company focused its

attention to nurses. Gallup in its survey in more than 200 hospitals found that nurse engagement is a key (the most important) factor reducing patient mortality. The patient death rate as the most serious indicator of medical quality is - in addition to nurse engagement - also affected by the number of nurses (second factor) and by percentage of overtime hours per year (third factor). Thus, surprisingly, the commitment and emotional involvement of the nurses on staff is even more important than their number [1]. Many engagement researches in health sector are targeted to physicians. The problem of physician engagement is that "it is not merely a matter of engaging individuals, but of engaging members of a group, who are likely to be highly identified with their profession, attached to its defining attributes and norms, and motivated to protect its power and status" [13, p. 42]. The state and level of employee engagement in health sector is far from ideal. The study „2010 Hospital Pulse Report: Employee and Nurse Perspectives on American Health Care" (the report of the Press Ganey Associates) shows that 45% of hospital employees are disengaged, disempowered, and unhappy with their jobs [in 9]. Holland sees the reason for the current unfavourable situation in approaching retirement age of "Baby Boom Generation" as well as in the apathy and restlessness of younger generations of employees which is caused by a lack of engagement with their positions [9].

Methodology and research sample
Many employee engagement surveys are designed to look at an individual's (employee's) behaviours, feelings and engagement at their particular job, which is only one side of the coin. Our goal was to look at the organizational aspects (factors) of engagement and examine the relationship between them and the individual employee engagement. The key question of the study is: What elements of culture most strongly relate to employee engagement? To achieve the purpose of this study was conducted a survey utilizing the factors and "symptoms" of employee engagement defined on the basis of review of relevant literature. When examining the relationship between the organizational factors of employee engagement (independent variables) and employee engagement (its manifestations) the correlation analysis was used.

As the survey is the most commonly used tool to investigate the engagement, the primary data were collected through survey in the form of self-coined questionnaires. Data were evaluated by methods of descriptive and inductive statistics using a statistical programs Statistica 12 CZ.

Research sample consists of 155 respondents who were employees working in different positions in health/healthcare organizations in Slovakia. A questionnaire was prepared with 5 identification questions/items and 20 items written from a first-person perspective (as positively formulated statements) that were scaled on five-point Likert scale (1 - strongly agree, 2 - agree, 3 - neutral, 4 - disagree, 5 - strongly disagree). The items were focused on organizational settings and cultural aspects (organizational factors) as well as on feelings and attitudes of employees - indicators of employee engagement. The following items were analyzed:

1. *Organizational factors:*
    - culture as a factor contributing to employee loyalty and desire to remain in the organization (OF1),
    - the "ability" of culture to value the work of employees (OF2),
    - culture as a factor making a positive image of the organization and making individuals want to join the organization (OF3),
    - the "ability" of culture to create an environment where employees' ideas are listened to and valued (OF4),
    - culture as a factor rewarding top-performing employees and excellent/superior employees' performance (OF5),
    - the "ability" of culture to create policies that encourage career growth and development opportunities (OF6);
2. *Employee engagement indicators:*
    - the joy of employees coming to work every day (Eng1),
    - identification of employees with the mission and vision of the organization (Eng2),
    - work as something that give employees a sense of personal accomplishment (Eng3),
    - employees' sense of pride in working for the organization (Eng4),
    - employees' willingness to give extra effort and to go the extra mile (to do more than is required) to support success of the organization (Eng5),
    - employees' involvement in the decisions affecting their work (Eng6),
    - job as a place where employees can use skills and abilities (Eng7),
    - employees' enthusiasm about their job and their total focus on their duties at work (Eng8),
    - work as a place where employees make every effort (Eng9).

Research findings

Whereas, in academia there is inconsistency in the application of a parametric and non-parametric methods (tests) at analyzing "Likert data" in data evaluation both - parametric and nonparametric methods can be used. For this reason, the selection of appropriate statistical test/ method was determined by the normality of data distribution. Shapiro-Wilk test of normality (p-value less than 0.05) revealed that the data are not from a normally distributed population so it is appropriate to use non-parametric methods (Spearman correlation). In compliance with generally accepted view that the correlation of less than 0.1 is considered to be a trivial, correlation in the interval from 0.1 to 0.3 to be small, in interval 0.3 to 0.5 to be medium, in interval 0.5 to 0.7 to be high, in interval 0.7 to 0.9 to be very high it has been found that:

- concerning the first organizational factor (OF1) "culture as a factor contributing to employee loyalty and desire to remain in the organization", there is a high correlation between this factor and:
    - identification of employees with the mission and vision of the organization (Eng2) (r=0.65),
    - the joy of employees coming to work every day (Eng1) (r=0,63),

- employees' sense of pride in working for the organization (Eng4) (r=0.63),
- employees' involvement in the decisions affecting their work (Eng6) (r=0.54),
- work as something that give employees a sense of personal accomplishment (Eng3) (r=0.52);
- organizational factor "the "ability" of culture to value the work of employees" (OF2) strongly correlates with following employee engagement indicators:
  - identification of employees with the mission and vision of the organization (Eng2) (r=0.73).
  - employees' sense of pride in working for the organization (Eng4) (r=0.72),
  - the joy of employees coming to work every day (Eng1) (r=0,70),
  - employees' involvement in the decisions affecting their work (Eng6) (r=0.64),
  - work as something that give employees a sense of personal accomplishment (Eng3) (r=0.6);
- there is a high correlation between the third organizational factor "culture as a factor making a positive image of the organization and making individuals want to join the organization" (OF3) and:
  - employees' sense of pride in working for the organization (Eng4) (r=0.7),
  - identification of employees with the mission and vision of the organization (Eng2) (r=0.69),
  - the joy of employees coming to work every day (Eng1) (0.57);
- there is statistically significant association between the "ability" of culture to create an environment where employees' ideas are listened to and valued (OF4) and:
  - employees' sense of pride in working for the organization (Eng4) (r=0.7),
  - identification of employees with the mission and vision of the organization (Eng2) (r=0.69),
  - the joy of employees coming to work every day (Eng1) (0.65),
  - employees' involvement in the decisions affecting their work (Eng6) (r=0.56);
- fifth factor "culture as a factor rewarding top-performing employees and excellent/superior employees' performance" (OF5) correlates with:
  - employees' sense of pride in working for the organization (Eng4) (r=0.69),
  - the joy of employees coming to work every day (Eng1) (0.59),
  - identification of employees with the mission and vision of the organization (Eng2) (r=0.58),
  - employees' involvement in the decisions affecting their work (Eng6) (r=0.55);
- organizational factor "the "ability" of culture to create policies that encourage career growth and development opportunities" (OF6) correlates with all employee engagement indicators, but the correlations is moderate to weak;
- there is moderate correlation between employee engagement indicator "the employees' willingness to give extra effort and to go the extra mile to support success of the organization" (Eng5) and organizational factors OF2 – OF5;

- last three engagement indicators "job as a place where employees can use skills and abilities" (Eng7), "employees' enthusiasm about their job and their total focus on their duties at work" (Eng8) and "work as a place where employees make every effort" (Eng9) correlated, but very poorly with all organizational factors (OF1 – OF6).

Conlusion

The results highlight the correlation between organizational - more precisely cultural - factors and employees' engagement. Although the relationships between certain organizational factors and indicators of engagement range from weak to high, it is evident that a good organizational settings (under which it is primarily cultural factors) are essential in making employees to be engaged. In strengthening employees' engagement is essential to build a culture that gives employees a sense of fulfillment and satisfaction, culture that values employees' work and their ideas and that contributes to a positive image of the organization.

Súhrn

Konceptu angažovanosti zamestnancov je venovaná čoraz väčšia pozornosť najmä vďaka jeho preukázanému vplyvu na úspech, produktivitu, výkonnosť, konkurencieschopnosť a inovačnú schopnosť organizácií. Organizácie zaujímajú čoraz aktívnejší postoj pri posilňovaní a zvyšovaní angažovanosti zamestnancov, snažia sa využiť emocionálny záväzok zamestnancov voči organizácii a tiež ich vášeň a odborné znalosti na dosiahnutie svojich cieľov. V kontexte zdravotnej starostlivosti je význam tohto konceptu/prístupu nespochybniteľný najmä vďaka jeho významnému vplyvu na kvalitu zdravotníckych služieb a tiež spokojnosť a bezpečnosť pacientov príp. klientov. Cieľom tohto príspevku bolo vychádzajúc z analýzy primárnych skúmať a zhodnotiť mieru angažovanosti zamestnancov v slovenskom zdravotníctve. Bolo zistené, že existuje korelácia medzi organizačnými (kultúrnymi) faktormi a mierou angažovanosti zamestnancov v zdravotníctve.

References

[1] BLIZZARD, R., 2005 (27. december). *Nurse Engagement Key to Reducing Medical Errors* [online]. In: *Gallup*. Retrieved from: http://www.gallup.com/poll/20629/nurse-engagement-key-reducing-medical-errors.aspx

[2] BONIAS, D., LEGGAT, S. G. a BARTRAM, T., 2012. Encouraging participation in health system reform: is clinical engagement a useful concept for policy and management? In: *Australian Health Review,* Vol, 36, No. 4, 2012. pp. 378-383. ISSN 0156-5788.

[3] BUCKINGHAM, I., 2010. 10 Ways to Spot an Engaged Employee. In: ZINGER, D. (ed.) *The Employee Engagement Top 10* [online]. Retrieved from: www.davidzinger.com/wp-content/uploads/Top-Tens-of-Employee-Engagement.pdf

[4] DECISION WISE. *Download Employee Engagement Survey* [online]. Retrieved from: https://www.decision-wise.com/employee-engagement-survey-download/

[5]   DENISON CONSULTING, 2010. Organizational Culture & Employee Engagement: What's the Relationship? [online]. In: *Denison: Research Notes*, Vol. 4, Iss. 3, 2010. Retrieved from: https://www.denisonconsulting.com/sites/default/files/documents/resources/rn _engagement_0.pdf

[6]   GALLUP. Q12 EMPLOYEE ENGAGEMENT [online]. Retrieved from: http://www.gallup.com/ services/169328/q12-employee-engagement.aspx

[7]   GUEST, D., 2014. Employee engagement: a sceptical analysis. In: *Journal of Organizational Effectiveness: People and Performance*, Vol. 1, Iss. 2, 2014. pp. 141-156. ISSN 2051-6614.

[8]   HICKS, R., 2011. *Recognizing the value of employee engagement: the future of public service in Alberta and British Columbia* (Information Bulletin, Number 152) [online].   Western Centre for Economic Research Alberta School of Business, University of Alberta, June 2011. ISBN 978-1-55195-815-6   (978-1-55195-816-3).   Retrieved   from: http://www.iccs-isac.org/en/psvc_event/docs/152_Hicks.pdf

[9]   HOLLAND, J., 2011. *Talent management: a crystal ball into your organization's future* [online]. General Electric Company. Retrieved from: http://partners.gehealthcare.com/   Talent_Management_A_Crystal_Ball-WP-0811.pdf

[10]   CHARTERED INSTITUTE OF PERSONNEL AND DEVELOPMENT (CIPD), 2011. *Shaping the Future: Final Report* [online]. Retrieved from: http://www.cipd.co.uk/hr-resources/research/sustainable-organisation-performance-final-report.aspx

[11]   CHRISTENSEN HUGHES, J. and ROG, E., 2008. Talent management. In: *International Journal of Contemporary Hospitality Management*, Vol. 20, Iss. 7, pp. 743-757. ISSN 0959-6119.

[12]   KAHN, W. A., 1990. Psychological conditions of personal engagement and disengagement at work. In: *Academy of Management Journal*, Vol. 33, No. 4. pp. 692-724. ISSN 0001-4273.

[13]   KREINDLER, S. A., LARSON, B. K. WU, F. M., GBEMUDU, J. N., CARLUZZO, K. L., STRUTHERS, A., VAN CITTERS, A. D., SHORTELL, S. M., NELSON, E. C. and FISHER, E. S., 2014 . The rules of engagement: physician engagement strategies in intergroup contexts. In: *Journal of Health Organization and Management*, Vol. 28, Iss. 1. pp. 41-61. ISSN 1477-7266.

[14]   KRUSE, K., 2015 (26. február). The ROI of Employee Engagement In Hospitals   [online].   In: *Forbes   /   Leadership*.   Retrieved   from: http://www.forbes.com/sites/kevinkruse/2015/   02/26/the-roi-of-employee-engagement-in-hospitals/

[15]   MONESSON, E. P., 2013. The Benefits of an Anabolic Culture: Understanding Your Leadership Style and Its Effect on Employee Engagement. In: *CPA Practice Management Forum*, August 2013.

[16]   OLOGBO, A. C. and SOFIAN, S.,2013. Individual and Organizational Factors of Employee Engagement on Employee Work Outcomes. In: *International Journal of Business and Behavioral Sciences,* Vol. 3, No.3, March 2013. ISSN 2226-5651.

[17]   RAMA DEVI, V., 2009. Employee engagement is a two-way street. In: *Human Resource Management International Digest*, Vol. 17, No. 2, 2009, pp. 3-4. ISSN 0967-0734.

[18]   SIRISETTI, S., 2012. Employee engagement culture. In: *The Journal of Commerce*, Vol. 4, No. 1, ISSN 2218-8118, 2220-6043.

[19]   SWARNALATHA, C. and PRASANNA, T. S., 2013. Employee engagement: the concept. In: *International Journal of Management Research and Reviews*, Vol. 3, No. 12. pp. 3872-3880. ISSN 2249-7196.

[20]   TANEJA, S., SEWELL, S. S. and ODOM, R. Y., 2015. A culture of employee engagement: a strategic perspective for global managers. In: *Journal of Business Strategy*, Vol. 36 Iss 3. pp. 46-56. ISSN 0275-6668

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RELATIONSHIP BETWEEN WAGES AND LABOUR PRODUCTIVITY IN SLOVAK INDUSTRY

VZŤAH MEDZI MZDOU A PRODUKTIVITOU PRÁCE V SLOVENSKOM PRIEMYSLE

Abstract: *Company is considered successful if it fulfils its goals in the long term. For optimal decision it is necessary to have a sufficient amount of relevant information. One option for minimizing deviations and for having right information is statistical modelling. Using quarterly data of labour productivity from turnover of own performance and products, and wages in Slovak industry from first quarter 2008 to fourth quarter 2015 we model the relationship between wages and labour productivity in Slovak industry. For modelling is used correlation analysis and classical linear regression analysis in compare with parabolic nonlinear regression analysis. Results are presented in tabulated form and graphically, too. Results show that taking into account linear models, with growth of labour productivity in Slovak industry wages growth, too (expect one part of industry). We investigated that using parabolic nonlinear analysis we obtain better results for all cases.*
Key words: *wage, labour productivity, industry, regression analysis*

Kľúčové slová: *mzda, produktivita práce, priemysel, regresná analýza*

JEL: E24, L60

Introduction

Company is considered successful if it fulfils its goals in the long term. The manager's role is to define these goals and to decide what is the best way to achieve them. For optimal decision it is necessary to have a sufficient amount of relevant information. During analyzing the company managers can find deviations from the expected results of the company. The role of the company managers is to minimize these deviations as much as possible. One option for minimizing deviations and for having right information is statistical modelling. With this modelling it is possible to predict how the situation will develop in given situation.

An important part of the company analysis is the analysis of labour productivity. High productivity reduces costs, so the company can increase the number of customers, increase profit, or increase wages. The willingness of employers to give employees higher wages depends on the amount of added value that employees create. Thus, labour productivity should grow faster than wages.

The aim of this paper is to explore the relationship between wages and labour productivity in Slovak industry.

Theoretical Background and Literature Review

Modelling of any economic phenomenon respectively specific economic variable requires an understanding its fundamentals and function in the whole economic environment. This is even in the modelling of dependence between wages and labour productivity. Therefore, we mention brief explanation of the main terms.

1 Wage

According to [8], from a microeconomic point of view, the wage is defined as remuneration for work of individual employees of the company, which means that wage is a price of company factors. Wage affects the amount of costs, and it means that wage affects creating profit. Wage is part of company costs. The first part of wage is paid on the basis of employment contracts and is independent of company revenues (basic wage). The second part is made up of rewards that payment is linked to the fulfilment of any of the business characteristics, for example profit.

In [8] is said that wage has two basic functions, namely economic and social.

1. Economic function has two levels:
    - national-economic, which monitors macroeconomic relations particularly regarding to commodity money equilibrium and inflation. It monitors also relations regarding to wages, labour productivity and price levels.
    - business-economic, essence of which is that wage as a labour price affects the amount of company costs. Company looks for the ways how to reduce labour costs and how to spend human work effective. Wages are also a stimulus to work performance.
2. Social function is used to regulate a minimum standard of living.

Wage development is closely related to the development of other macroeconomic indicators of each country. The main determinants that have a significant impact on the nominal and real wage are price development, inflation, labour productivity and unemployment [7]. In this paper, we just look at the labour productivity.

2 Labour Productivity

The labour productivity analysis is an effective tool in determining the effectiveness of the various economic activities for any economy, but also for the whole national economy. From the microeconomics point of view, labour productivity is one of the most important factors of company efficiency as well as a crucial indicator of its competitiveness in the market [3].

Labour productivity is the ratio between output and input. It is expressed as:

$$LP = \frac{output}{input} \tag{1}$$

where *LP* is labour productivity; *output* can be value added, revenues, income, or profit; and *input* can be average number of employees, number of working hours, costs and so on [17].

Growth of labour productivity is a condition for growth of company and for the growth of standard of living of employees. For the healthy development of the

company must be growth in wage underpinned by growth in labour productivity, while productivity should grow faster. It is proven by equation [15]:

$$\frac{value\,added}{employees} = \frac{wages\,and\,rewards}{employees} / \frac{wages\,and\,rewards}{value\,added} \,.$$
(2)

The left side of equation is labour productivity. The first fraction on the right side of the equation expresses the average wages of employees, the second fraction is wage cost ratio. If labour productivity will be constant and compensation for employees will increase then share of wages and rewards on value added will increase. This would cause decrease in the amount of money for interest, taxes, investments and the returns to owners. This development is not in the interests of any company, which goal is the long-term growth. Vice versa, long-term growth is allowed to the company by declining wage cost ratio. Therefore it is appropriate to adjust the above relationship (2) as follows [15]:

$$\frac{compensation\,for\,employees}{value\,added} = \frac{compensation\,for\,employees}{employees} / \frac{value\,added}{employees} \,.$$
(3)

It means that to decrease wage cost ratio is necessary to arrange that labour productivity grew faster than average wage. In company should be obtained that the volume of production respectively labour productivity is growing faster than wages [17]. Higher productivity means higher wages, and then higher demand for work [14]. According to the World Bank [18] higher labour productivity improves the economic and social environment, reducing poverty through investments in human and physical capital, social protection and technological progress.

3 Literature Review
Several studies have documented labour productivity or examined the effects of wage on labour productivity. For example, Aramvareekul [1] in his dissertation work examined labour productivity in the construction industry of USA. He wanted to know why labour productivity in the construction industry had followed a declining trend and in other sectors increased. Zdeněk and Střeleček [19] examined development of employment, average wages and labour productivity in the Czech Republic using shift-shell analysis. There were demonstrated statistically significant differences in growth rates between various sectors. The differences in growth rates between various regions could not be proven. Determinants of labour productivity in Croatia were examined in [12]. As determinants which have impact on labour productivity were selected human and physical capital. Resulting model explained more than 90 percent of the variation in labour productivity.
Konings and Marcolin [9] investigated if wages reflect labour productivity in three Belgian regions (Wallonia, Brussels, Flanders). The results were different. From one point of view there were found stronger deviations between labour productivity and wages. Liu [10] studied the effects of relative deprivation and efficiency wages on labour productivity in manufacturing industry in Taiwan and South Korea. Empirical results of this study showed similar pattern for both countries. Linkage

between real wages and labour productivity in Tanzania was examined in [6]. Trough regression analysis and Granger causality test was found pattern in the link between real wages and labour productivity. Relationship between real wages and labour productivity was studied also in the Mexican tourism sector [4]. There was proposed a simple theoretical model and was proved that real wage is weakly exogenous and causes labour productivity. Effect of real wages on labour productivity in Malaysian manufacturing sector was examined in [16]. Using Granger causality test was found that real wages and labour productivity are co-integrated and share common trend. Using panel data analysis of Indian manufacturing sector was investigated relationship between productivity and real wages [2]. There were found co-integration for all industries.

Data and Methodology
1 Data
To modelling relationship between wages and labour productivity in Slovak industry we use quarterly data of labour productivity from turnover of own performance and products, and wages in Slovak industry from first quarter 2008 to fourth quarter 2015. These datasets were obtained from Slovstat, which is statistical database of Statistical Office of Slovak Republic. Both variables are stated in Euro.
According to SK NACE, industry includes the activities of mining and quarrying (B), manufacturing (C), electricity, gas, steam and air conditioning supply (D) and water supply; sewerage, waste management and remediation activities (E). Quarterly labour productivity from turnover of own performance and products are expressed by volume of turnover of own performance and products per one employee in industry per quarter. Turnover of own performance and products includes the value of sold products and services from own production provided by domestic and foreign customers. This turnover does not include value added tax and excise duty. The average nominal monthly wage consists of basic (tariff) wage which include: basic components of contracted wage; wage for working overtime; compensation of wage for not worked hours; monthly and long-term bonuses paid according to performance and evaluation criteria; extra payments for overtime, night work, work on Saturdays and Sundays, holidays, damaging health environment, noise, risky and hard work; wage in kind. Quarterly wage was counted from average nominal monthly wage by Statistical Office of Slovak Republic.

2 Methodology
For modelling relationship between wage and labour productivity in Slovak industry we use well-known correlation analysis and classical regression analysis.
According to classical regression analysis we use linear model [13]:

$$y = b_0 + b_1 \cdot x + \varepsilon , \qquad\qquad (4)$$

Coefficients b_0, and b_1 we obtain from the normal system:

$$\hat{b}_0 \cdot n + \hat{b}_1 \cdot \sum_{i=1}^{n} x_i = \sum_{i=1}^{n} y_i \, ,$$

$$\hat{b}_0 \cdot \sum_{i=1}^{n} x_i + \hat{b}_1 \cdot \sum_{i=1}^{n} x_i^2 = \sum_{i=1}^{n} x_i \cdot y_i \, . \tag{5}$$

We also model relationship between our variables using parabolic nonlinear model [5]:

$$y = b_0 + b_1 \cdot x + b_2 \cdot x^2 + \varepsilon \, . \tag{6}$$

From this model we obtain coefficient b_0, b_1 and b_2 trough the system of equations:

$$b_0 \cdot n + b_1 \sum_{i=1}^{n} x_i + b_2 \sum_{i=1}^{n} x_i^2 = \sum_{i=1}^{n} y_i \, ,$$

$$b_0 \sum_{i=1}^{n} x_i + b_1 \sum_{i=1}^{n} x_i^2 + b_2 \sum_{i=1}^{n} x_i^3 = \sum_{i=1}^{n} x_i y_i \, , \tag{7}$$

$$b_0 \sum_{i=1}^{n} x_i^2 + b_1 \sum_{i=1}^{n} x_i^3 + b_2 \sum_{i=1}^{n} x_i^4 = \sum_{i=1}^{n} x_i^2 y_i \, .$$

For finding how strong relationship between our two variables is, we use Pearson's correlation coefficient which is formulated as [13]:

$$r \equiv r_{x,y} = \frac{\sum_{i=1}^{n} x_i \cdot y_i - n \cdot \bar{x} \cdot \bar{y}}{\sqrt{\left[\sum_{i=1}^{n} x_i^2 - n \cdot \bar{x}^2\right] \cdot \left[\sum_{i=1}^{n} y_i^2 - n \cdot \bar{y}^2\right]}} \, . \tag{8}$$

This coefficient can have value from the interval $\langle -1,1 \rangle$. If r is equal to -1, linear relationship between variables y and x is regarded as perfectly negative. If r is equal to +1 linear relationship between variables y and x is regarded as perfectly positive. If r is equal to zero, there is absence of any linear relationship between variables y and x. The r value usually belongs to interval $(-1;0)$ or $(0;1)$. Than we test whether this value can be considered as a zero value or not. Therefore, the null hypothesis H_0 versus alternative hypothesis H_1 is formulated as

$$H_0 : r = 0 \qquad \text{versus} \qquad H_1 : r \neq 0 \, . \tag{9}$$

To decide whether the null hypothesis H_0 must be rejected or accepted we use p value. The rule is: if $p < 0.05$ then hypothesis H_0 is rejected. It means that between variables y and x exists linear correlation.

We also use coefficient of determination R^2, which can be interpreted as a proportion of the variation in variable y which is explained by variable x. This statistics is calculated as [11]:

$$R^2 = r^2.$$ (10)

Results

We wanted to investigate the relationship between wages and labour productivity in Slovak industry, namely in industry in total, in mining and quarrying, in manufacturing, in electricity, gas, steam and air conditioning supply, in water supply, sewerage, waste management and remediation activities. Our results related to using linear model are reported in table 1. Results related to using parabolic nonlinear model are reported in table 2. We presented here value of correlation coefficient r, value of coefficient of determination R^2, and coefficients b_0, b_1 and b_2 for using model.

Tab. 1: Relationship between wages and labour productivity using linear model $y = b_0 + b_1 \cdot x$

Part of industry	b_0	b_1	r	R^2
industry in total	302.0723	0.0144	0.8667	0.7511
mining and quarrying	514.3579	0.0230	0.6178	0.3817
manufacturing	322.4152	0.0146	0.8838	0.7811
electricity, gas, steam and air conditioning supply	1124.9574	0.0016	0.3030	0.0918
water supply; sewerage, waste management	141.9306	0.0584	0.8614	0.7420

Source: own calculation using STATISTICA 13

Tab. 2: Relationship between wages and labour productivity using nonlinear model
$y = b_0 + b_1 \cdot x + b_2 \cdot x^2$

Part of industry	b_0	b_1	b_2	r	R^2
industry in total	1149.4860	-0.0512	0.00000091	0.9028	0.8150
mining and quarrying	359.9749	0.0403	-0.00000048	0.6193	0.3835
manufacturing	1316.6772	-0.0485	0.00000097	0.9359	0.8760
electricity, gas, steam and air conditioning supply	217.0775	0.0134	-0.00000004	0.3832	0.1469
water supply; sewerage, waste management and remediation	358.1616	0.0205	0.00000164	0.8622	0.7434

Source: own calculation using STATISTICA 13

For all correlation coefficients was $p < 0,05$, except linear model in electricity, gas, steam and air conditioning supply. In this case was $p = 0,0918$. In means, that we can reject linear relationship between wages and labour productivity in this part of industry. In this part of industry was calculated also the lowest value of correlation coefficient (only $r = 0,3826$ using nonlinear model). According to higher values of correlation coefficient using parabolic model we can say, that there exist nonlinear relationship between wages and labour productivity in Slovak industry in total, and also in the selected parts of this industry. The best relationship we can see in manufacturing where correlation coefficient was even $r = 0,9359$ using nonlinear model. Coefficient of determination R^2 was in this case $R^2 = 0,8760$. It means that 87,6% of variation in wages in manufacturing is explained by labour productivity in this part of industry.

We presented our results also in figure 1 till figure 5. In all figures we can see on the left side regression line using classical linear model and on the right side regression curve using parabolic nonlinear model. We can see that better estimations were obtained using nonlinear modelling. Taking into account linear models we can say that with higher labour productivity in Slovak industry wages in Slovak industry are higher, too. This statement is true also for all selected parts of Slovak industry, expect part of electricity, gas, steam and air conditioning supply. As we said above we can reject linear relationship between wages and labour productivity in this part of industry because of p value.

Fig. 1: Relationship between wages and labour productivity in industry in total using linear model (left side) and nonlinear model (right side)
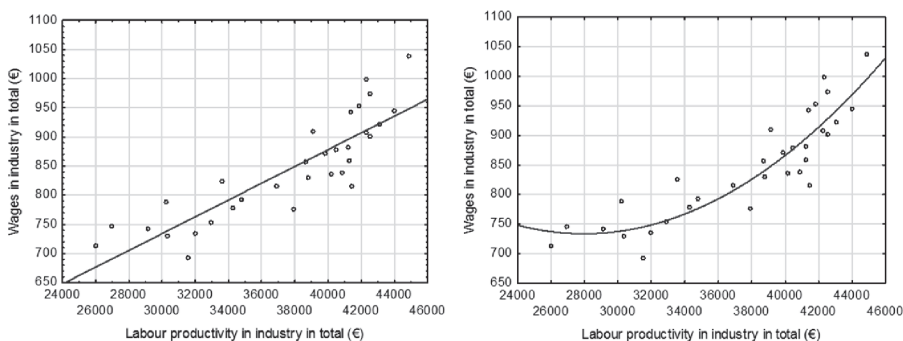
Source: own calculation using STATISTICA 13

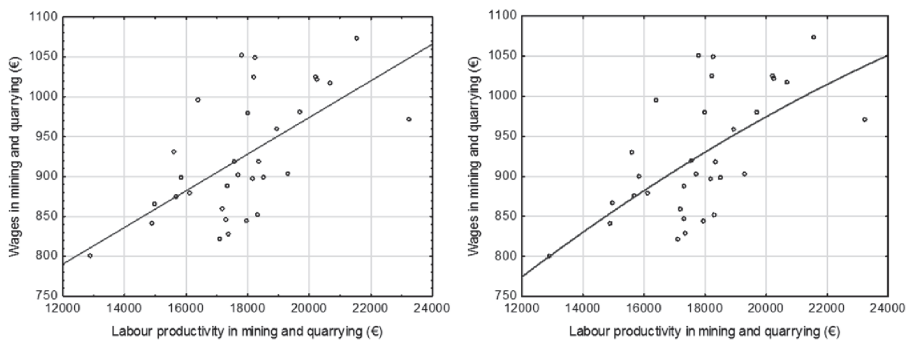Fig. 2: Relationship between wages and labour productivity in mining and quarrying using linear model (left side) and nonlinear model (right side)

Source: own calculation using STATISTICA 13

Fig. 3: Relationship between wages and labour productivity in manufacturing using linear model (left side) and nonlinear model (right side)
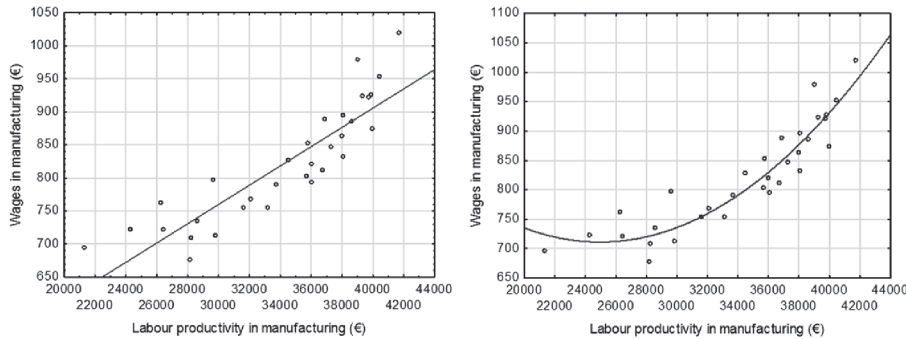
Source: own calculation using STATISTICA 13
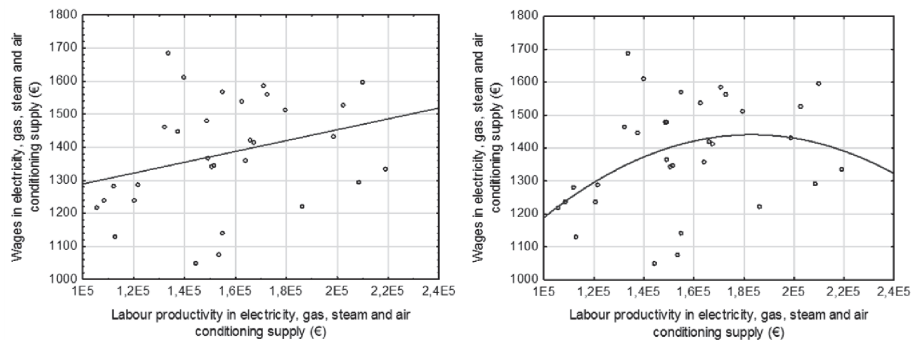
Fig. 4: Relationship between wages and labour productivity in electricity, gas, steam and air conditioning supply using linear model (left side) and nonlinear model (right side)

Source: own calculation using STATISTICA 13

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Fig. 5: Relationship between wages and labour productivity in water supply; sewerage, waste management and remediation activities using linear model (left side) and nonlinear model (right side)
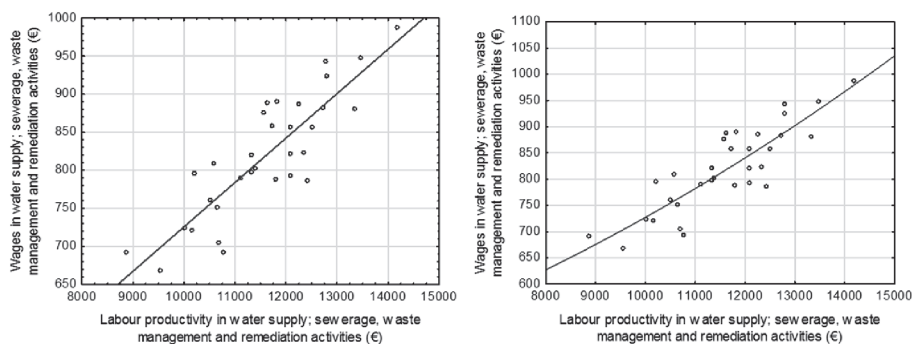
Source: own calculation using STATISTICA 13

We have omitted graphs of frequency distribution, half-normal probability graphs, analysis of variance, test of normality of residuals and other considered tests and results. However, these results were always taken into account.

Summary

For company is important to be successful and it includes to fulfil its goals in the long term. Therefore, it is important to have a sufficient amount of relevant information. Option for having a right information and for minimizing deviations from goals is statistical modelling.

One of the important part of the company analysis with which can company fulfil its goals is the analysis of labour productivity. High productivity reduces costs, so the company can increase the number of customers, increase profit or increase wages. The willingness of employers to give employees higher wages depends on the amount of added value that employees create. Thus, labour productivity should grow faster than wages. In this paper we present brief explanation of the terms as wage and labour productivity. But the main aim of this paper is to explore the relationship between wages and labour productivity in Slovak industry. This analysis is doing trough quarterly data of labour productivity from turnover of own performance and products, and wages in Slovak industry from first quarter 2008 to fourth quarter 2015. For modelling is used correlation analysis and classical linear regression analysis in compare with parabolic nonlinear regression analysis. Results are presented in tabulated form and graphically, too. We show that taking into account linear models, with growth of labour productivity in Slovak industry wages growth, too (expect one part of Slovak industry which is electricity, gas, steam and air conditioning supply). We investigated that using parabolic nonlinear analysis we obtain better results for all cases.

Súhrn

Pre spoločnosť je dôležité byť úspešnou, a to zahŕňa napĺňanie jej cieľov v dlhodobom hľadisku. Preto je dôležité mať dostatočné množstvo relevantných informácií. Možnosťou k dosiahnutiu správnych informácií a k minimalizovaniu odchýlok od stanovených cieľov je štatistické modelovanie. Jednou z dôležitých častí podnikovej analýzy, prostredníctvom ktorej môže napĺňať podnik svoje ciele je analýza produktivity práce. Vysoká produktivita znižuje náklady, a tak môže podnik zvýšiť množstvo svojich zákazníkov, zvyšovať zisk, alebo zvyšovať mzdy. Ochota zamestnávateľov poskytnúť zamestnancom vyššie mzdy závisí na množstve pridanej hodnoty, ktorú zamestnanci vytvárajú. Preto by produktivita práce mala rásť rýchlejšie ako mzdy. V tomto článku predkladáme stručné vysvetlenie pojmov ako mzda a produktivita práce. Hlavným cieľom tohto článku je však zistenie vzťahu medzi mzdami a produktivitou práce v slovenskom priemysle. Táto analýza je vykonávaná prostredníctvom kvartálnych dát, týkajúcich sa produktivity práce z tržieb za vlastné výkony a tovar a dát tákajúcich sa mzdy v slovenskom priemysle od prvého kvartálu 2008 do štvrtého kvartálu 2015. Pre modelovanie je použitá korelačná analýza a klasická lineárna regresná analýza v porovnaní s parabolickou nelineárnou regresnou analýzou. Výsledky sú prezentované v tabuľkách aj graficky. Je tu ukázané, že ak berieme do úvahy lineárne modely, tak s rastom produktivity práce v slovenskom priemysle, rastú aj mzdy (okrem časti slovenského priemyslu, ktorou je dodávka elektriny, plynu, pary a studeného vzduchu). Zistili sme, že použitím parabolickej nelineárnej analýzy dostávame lepšie výsledky pre všetky prípady.

References

[1]   ARAMVAREEKUL, P. An analysis of labor productivity in the U.S. construction industry. Dissertation work. 2002.

[2]   BHATTACHARA, M., NARAYAN, P. K., POPP, S., RATH, B. N. The productivity-wage and productivity-employment nexus: a panel data analysis of Indian manufacturing. In Empirical Economics. 2011, vol. 40(2), p. 285-303.

[3]   BOLOGÁČ, J. Vývoj produktivity práce na Slovensku v 21. storočí. In Ekonomika a informatika: vedecký časopis FHI EU v Bratislave a SSHI. 2015, vol. 13(1), p. 3-12.

[4]   BRIDA, J. G., RISSO, W. A., SANCHEZ CARRERA E. J. Real wages as determinant of labour productivity in the Mexican tourism sector. In European Journal of Tourism Research. 2010, vol. 3(1), p. 67.

[5]   HUDEC, O. a kol. Štatistické metódy v ekonomických vedách. 1st ed. Košice: Elfa, 2007. 196 s. ISBN 978-80-8086-059-2.

[6]   ISLAM, R., KINYONDO, A., NGANGA, J. Real wages and labour productivity in Tanzania: How do they link? In Journal of African Studies and Development. 2015, vol. 7(3), p. 81.

[7]   IŠTVANÍKOVÁ, A., LUKÁČIK, M., SZOMOLÁNYI, K. Mzdy v hospodárstve – teória a prognóza. Retrived form: http://www.fhi.sk/files/katedry/kove/veda-vyskum/prace/2002/Istvanikova-Lukacik-Szomolanyi2002.pdf

[8] IŠTVANÍKOVÁ, A., SZOMOLÁNYI, K., LUKÁČIK, M. Modelovanie vývoja miezd. In Manažment v teórii a praxi. 2005, vol. 1(2).

[9] KONINGS, J., MARCOLIN, L. Do wages reflect labor productivity? The case of Belgian regions. In Journal of European Labor Studies. 2014, vol. 3(1), p. 1-21.

[10] LIU, J. Does Wage Inequality Affect Labor Productivity? Some Evidence from Manufacturing Industries of Taiwan and South Korea. In Asia Pacific Management Review. 2007, vol. 7(4), p. 449-476.

[11] MARKIDAKIS, S., WHEELWRIGHT, S. C., HYNDMAN, R. J. Forecasting : Methods and Applications. 3rd ed. USA: John Wiley & Sons, 1998. 642 s. ISBN 978-0-471-53233-0.

[12] MIROSLAV, D., TRSTENJAK, J. Modelling of labour productivity in Croatia. In An Enterprice Odyssey. International Conference Proceedings. 2012, p. 85.

[13] PAVLUŠ, M., VAŠANIČOVÁ, P. Orthogonal regression method and its application to air modeling in building's environment. In Proceedings of the International Conference Management 2014: Business, Management and Social Sciences Research. 2014. p. 397-406. ISBN 978-80-8165-052-9.

[14] SIROVÁTKA, T. Labour market policy and social inclusion. In Sborník prací Fakulty sociálních studií Brněnské univerzity. 2003.

[15] SYNEK, M., KOPKÁNĚ, H., KUBÁLKOVÁ, M. Manažérske výpočty a ekonomická analýza. 1st ed. Praha: C. H. Beck, 2009. 301 s. ISBN 9788074001543.

[16] TANG, C. F. The non-monotonic effect of real wages on labour productivity. New evidence from the manufacturing sector in Malaysia. In International Journal of Social Economics. 2012, vol. 39(6), p. 391-399.

[17] TEKULOVÁ, Z. Produktivita podniku. 1st ed. Bratislava: CVK CONSULT, 2015. 70 s. ISBN 978-80-971986-1-9.

[18] THE WORLD BANK. World development indicators. USA: The World Bank, 2009. 460 s. ISBN 978-0-8213-7829-8.

[19] ZDENĚK, R., STŘELEČEK, F. Hodnocení vývoje zaměstnanosti, prumerné mzdy a productivity práce pomocí shift-share analýzy. In E + M Ekonomie a Management. 2012, vol. 3, p. 4.

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Alexandra Turáková

THE DIVERSITY AS A FACTOR EFFECTING CORPORATE CULTURE AND ITS IMPACT ON THE CULTURE DIFFERENCES BY LEWIS MODEL IN SLOVAK AND CHINESE COMPANY

DIVERZITA AKO FAKTOR OVPLYVŇUJÚCI PODNIKOVÚ KULTÚRU A JEJ VPLYV NA KULTÚRNE ROZDIELY DEFINOVANÉ PODĽA LEWISOVHO MODELU V SLOVENSKOM A ČÍNSKOM PODNIKU

Abstract: Corporate culture is an integral part of each enterprise. It is shaped by many elements, more or less visible for its environment, but the basic element of corporate culture represents an employee. There are a lot of factors which affect the corporate culture. One of them is the diversity. Each employee brings to the enterprise several dimensions of diversity - diverse backgrounds, gender, characteristics, skills and experiences. It is needed to use soft edges of diversity for recognizing and managing differences. By comparisons of national cultures we can observe differences in several parts of the culture – religion, high vs. low context by communication, past vs. future-oriented culture, collectivism vs. individualism and others. Different nations have a different character which affects their behavior and the way how they act, what is acceptable or what has a higher priority for them. Diversity factor from behavioral dimension as a part of corporate culture has power to stimulate and form strong culture within each enterprise. From global perspective has cultural intelligence an important role. Ability to recognize and understand diversity in cross-cultural situation supports growth and success of enterprises on the international market.
Key words: corporate culture, diversity, Lewis's cultural types

Kľúčové slová: podniková kultúra, diverzita, kultúrne typy podľa Lewisa,

JEL: M1, M14

Corporate culture and its elements

Corporate culture has been defined many times by many authors. Between some of them there are slight differences, some of those definitions using different wording but expressing the same meaning. In the pool of innumerous corporate culture definitions we can find one common trait. Corporate culture is unique. Each enterprise has an own corporate culture. This culture is matchless and we can say that it represents the DNA of the company. Corporate culture is made up of people and it has a social character. The basic component of the social system in each company is the employee whose behavior, thoughts, beliefs and core values influence and form the corporate culture.

Corporate culture represents according to Needle (2004) the collective values, beliefs and principles of company members. Culture of each enterprise is shaped by history, product, market, technology, strategy, leadership style, and we should not forget an impact of a national culture.

In the Lewis's book (2006) it is well described raising of the child and the child dependence on the parents based on differences in the cultures. Related to his explanation and comparison of different cultures we can liken relationship of employee to the company. We might compare corporate culture with parents' role. Corporate culture as "a parent" clearly defines for an employee as "a child" what is acceptable and what is not, what is right and what is wrong. It defines core values, basic rules for behavior, can prepare employee for successful interactions in their own culture and society.

Corporate culture has a social character. Its level, strength and content is highly influenced by internal environment - employees, management, leadership style and on the other hand external environment - competitors, legislation, state also affects it. Ravasi and Schultz (2006) described corporate culture as a set of shared assumptions that guide what happens in corporate by defining exemplary behavior in diverse situations. Corporate culture helps employees to identify themselves with an organization, affects the way they interact with each other, within or across departments, with business partners etc.
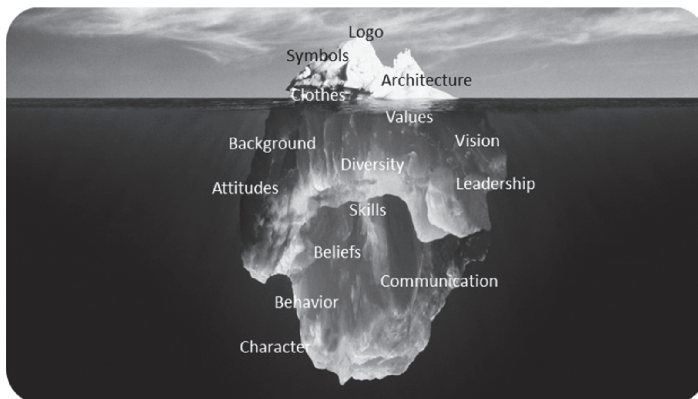
Elements of corporate culture
Even though there is no single definition of corporate culture we can come up with basic summary. Corporate culture represents a set of standards, basic rules and core values that are specific for each enterprise. This corporate culture set influences thinking and behavior of employees in daily business. Each culture is unique and there are a lot of factors and elements which creating one.

Elements of corporate culture are characterized by Schein (2010) in three levels model: artifacts and behaviors, espoused values and assumptions. We can simplify this model and divide corporate culture elements into the following groups (Fig.1):

• **Visible elements** – express character of the enterprise which is recognizable by external environment as well. We can include here all elements as symbols, logo, business, work clothes, work environment, equipment, architecture, etc.

• **Invisible elements** – represent all elements which are hidden under the surface, behind the enterprise gate - stories, management style, communication style, values, attitudes, behavior, standards of conduct, background, skills of employees and other.

Fig.1 Visible and invisible elements of corporate culture (own source)

Visible elements represent visual part of corporate culture. Those elements stand for face of corporate, how the company and its employees look. Invisible elements are mainly under the surface of each company although from time to time it is possible to see a part of them as well. The visibility of those hidden elements depends on time – the longer you know the company the better you get to know its character, invisible traits. This part is visible by company acting.

Diversity influence on corporate culture
Corporate culture is an integral part of each enterprise. The employees often do not perceive it, they are surrounded by it. As has been already mentioned corporate culture has different elements, dimensions and there are a lot of factors which affect it. Diversity represents one of the corporate culture factors.

There are more options how to describe diversity. People from different cultures share basic concepts, values but view them from different perspectives. Geert Hofstede (2010) defined diverse culture as "the collective programming of the mind that distinguishes the members of one category of people from another." The key expression in this definition is collective programming. Each employee as an individual has specific mindset. All employees create the culture in enterprise and let corporate culture to influence them.

Diversity can be viewed from many variable angles. It applies to whole package of the human being aspects - age, race, sex, religion, opinions, background, nationality etc. We can observe some specific various types of diversity within a company as e.g. positions, gender, leadership styles, behavior, experiences and skills. Those diverse factors have a broader differential by national comparison. According Hofstede's research 80 percent of the differences in employee's attitudes and behaviors are influenced by national culture.

There is definitely a global trend in business from worldwide perspective that culture is moving on the top position of the agenda as a major challenge for success. In shaping the corporate culture is imperative to respect the relevant laws and principles. We can describe briefly some important and major areas of cultural differences:

- Values – people from different regions have different national characteristics which affect their core beliefs, influence attitudes and a world view
- Communication – People around the world are using different speech styles and have different listening habits too. The most visible aspect of culture. Low-context cultures - the message is conveyed by the words used. High-context cultures - words convey only a limited part of the message
- Time concept - the same sentence has different meaning, e. g. "Meeting starts at 10:00" – for German it means that he/she needs to attend this session and be in the room prior the meeting start. For Italian it means that he/she is at 10:15 in cafeteria to take a coffee and be in the meeting room at 10:25.
- Space concept - personal space has different dimensions across different cultures. We can demonstrate it on the example of greetings. Some cultures prefer shaking hands, some hugging, some prefer just eye contact instead of personal contact.

Cultural Categories – Lewis's Model

Corporate culture is a characteristic of each company and it is influenced by cultural background of respective country. By comparisons of national cultures we can observe differences in social behavior in various social objects – department, company, country. Common sense, core values, behavior, beliefs, habits and others - each country or culture has an own set. To understand environment from global perspective it is needed to learn and understand, respect special features of other cultures. After visiting 135 countries and working in more than 20 of them Lewis (2006) analyzed the world's cultures based on behavior. He came to the conclusion that people can be divided into three basic groups and he named these categories Linear-active, Multi-active and Reactive (Fig.2).

Fig. 2 Basic culture categories defined (Lewis,2006)
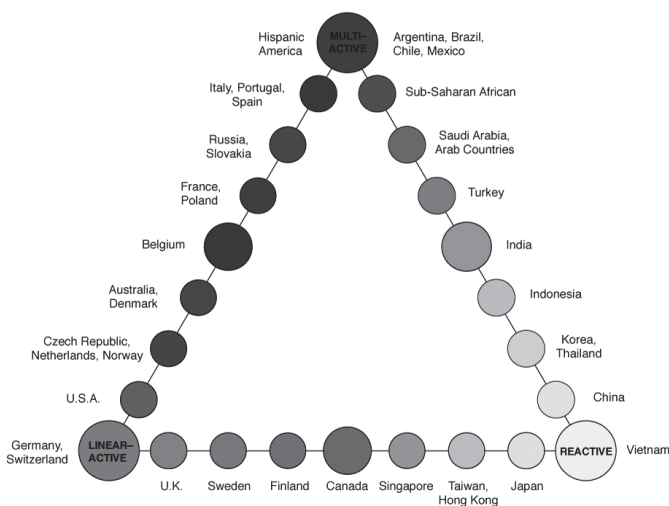
The different world's cultures has Lewis (2006) defined in three basic categories:

- **Linear actives** — those who plan, arrange, organize, do one thing at a time, follow action chains. The members of this group are Germans and Swiss. They are truthful rather than diplomatic and do not fear confrontation. Their work and as well as personal life is based on logic rather than emotions. Linear actives like facts, fixed agenda and they are very job oriented. They are able to separate social-private and professional life.
- **Multi-actives** — people belonging to this cultural category are able to do many things at once, planning their priorities not according to a time schedule, but according to the relative thrill or importance that each appointment brings with it. As member of this group we can consider Italians, Latin Americans and Arabs. Those cultures are very talkative and impulsive. These characteristic predict their orientation on people. They feel uncomfortable in silence. Multi-active people prefer face to face sessions.
- **Reactives** — member of this group has in the priority list courtesy and respect on the top. This group is best listening culture. Listening quietly, reacting calmly and carefully to the other side's proposals are their traits as well. This category is represented by Chinese, Japanese and Finns. Reactive cultures are the world's best listeners in as much as they concentrate on what the speaker is saying, do not interrupt a speaker while the discourse or presentation is on-going. Reactive people have large reserves of energy. Reactives tend to use names less frequently than other cultural categories.

Results of the culture analysis by using Lewis model

Lewis model has been applied in the survey for culture analysis. For survey needs has been used questionnaire with 18 questions related to behavior of employees according Lewis cultural characteristic. The survey was conducted in three enterprises in Slovakia and five small companies in China. Overall participated 631 in our analysis pool.

In total 558 participants took part in the analysis of Slovak companies, which represents 71.8% of the total number of all employees in these enterprises. Questionnaire was filled out by staff as well as by management. Characteristics of the enterprises are shown in Table 1.

Table.1 Characteristic of Slovak enterprises

ENTERPRISE	Number of employees	Number of surveyed employees	Number of employees surveyed [%]
Enterprise X	598	430	71,91
Enterprise Y	56	39	69,64
Enterprise Z	123	89	72,36
	777	**558**	**71,80**

Source: own

Second part of analysis has been carried out in Chinese enterprises. Characteristics of those small enterprises are shown in Table 2 below. All questioned companies are located in the same region - Shanghai. Corporate culture has been studied by a questionnaire based on Lewis cultural categories. Altogether 73 employees took part in the analysis, which represents 63.5 % of the total number of all employees. Questionnaire was filled out by staff across whole organizational structure.

Table.2 Characteristic of Chinese enterprises

ENTERPRISE	Number of employees	Number of surveyed employees	Number of employees surveyed [%]
Enterprise A	54	37	68,52
Enterprise B	18	10	55,56
Enterprise C	5	2	40,00
Enterprise D	21	14	66,67
Enterprise E	17	10	58,82
	115	73	63,48

Source: own

The purpose of analysis was to get to know the positions of surveyed enterprises in Lewis model for cultural types. The following table 3 displays the overview of percentage results of cultural type in the both surveyed countries. The chart shown below is pointing out what cultural type has been achieved in respective country.
According our survey results we can see that all surveyed enterprises have mixed character with one a stronger trait. At the this stage we can assert that Slovak companies have the strongest multi-active character with round 44% and Chinese companies achieved the highest score about 54 % in reactive cultural type.

Table.3 Weight of cultural type

	Multi-active	Reactive	Linear Active
Slovakia	43,79%	32,31%	23,91%
China	24,28%	54,11%	21,61%

Source: own

Results of the corporate culture analysis based on behavioral differences in selected enterprises shown below in the Fig. 3 displaying the overall results of achieved cultural type and the position of questioned Slovak and Chinese companies in Lewis cultural type model.

Fig. 3 Survey results – cultural types according Lewis defined model (own source)
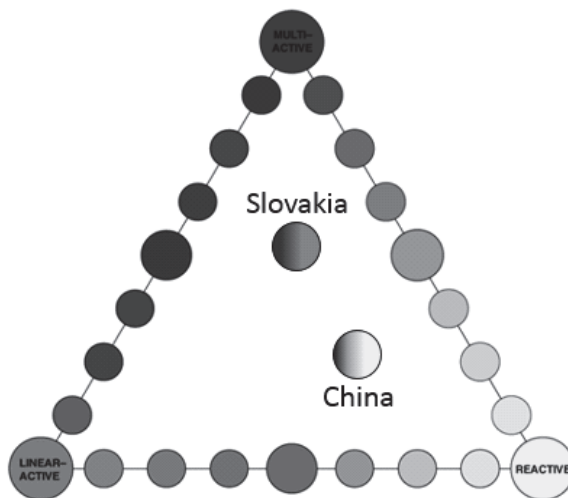
As displayed on the picture 3 above there is no clearly defined a one cultural type in analyzed enterprises in both countries. For all surveyed enterprises is the total result the mix of all cultural types.

Chinese enterprises confirmed reactive orientation as the strongest part in their behavior. From survey analysis it can be confirmed that Chinese are very good listeners. The listening is for them important and they do not interrupt others during the discussion. Rarely initiate they action or discussion, preferring first to listen to and wait for the reaction of others. They avoid confrontation and do not disagree openly.

From the results of Slovak characteristic analysis the following conclusion can be made. Slovaks are on time with prepared agenda but they are flexible with its content during the meeting run. They are able to do several things at the same time as well as talking to several people at once in case they have to. It might be caused by their communication style: Slovaks interrupt others during the communication. They display their feelings and emotion. They try to be or stay polite but in the certain point of communication you can see if they are sad, happy, agree with your argumentation or have totally different opinion. They do not express their selves only verbally but Slovaks use body language vividly as well.

Comparison of Slovak and Chinese culture
Total detailed results of the cultural analysis in selected enterprises have shown interesting behavioral picture of all analyzed enterprises. On the one there have been detected differences between Slovaks and Chinese but on the other hand some common traits between both nations have been found as well. More details are in the section below.

Different natures of Slovak and Chinese cultural type
According our results based on behavior there are some differences between Slovaks and Chinese. The very visible discrepancy is in communication. Slovaks are very talkative whereas Chinese people are better in listening. They concentrate on speaker and what he or she is saying. During the discussion have Slovaks tendency to jump in the discussion and raise their questions or comments. Slovaks split their role in communication between listener and speaker. Chinese show a different acting. They never interrupt presenter during the speech is ongoing and after the presentation they let speaker to take short rest. Chinese place all their comments and questions afterwards. Other differences are shown below on picture 4.

Fig. 4 Survey results – different natures in surveyed countries (own source)

| Linear active	
Multi active	
Reactive	
talks most of the time	listens most of the time
uses people as source	uses data and people sources
emotional	polite but direct
displays feelings	hides feelings
has good excuses	must not lose face
lets one project influence other	sees big picture of more projects
often interrupts	never interrupts
people orientated	very people orientated
flexible truth	diplomacy over truth

Our analysis confirmed several differences defined in theory between Slovaks and Chinese. One of them is related to the displaying their feelings. Slovaks react emotionally and you can observe easier than by Chinese what kind of mood they are in. You can read the feeling expression in their face as well. Chinese are careful by showing their feeling but they want to stay polite and try to be direct. Although our results mainly confirmed Lewis model based on behavior in a different situation, by comparison of differences between Slovaks and Chinese is above described trait unique. Chinese put them in more liner role than reactive one. It might be caused by effort to get closer to European behavioral style.

Common traits of Slovak and Chinese cultural type
Next section is focused on traits which are shared by both nations. Although Slovakia and China have totally different cultures, the way how employees react is in specific situation is common in several points. As displayed on the picture 5 below Slovaks and Chinese have adopted one trait from linear active group – sometimes impatient nature. Usually are Slovaks impatient and Chinese patient.

Fig. 5 Survey results – common traits in surveyed countries (own source)
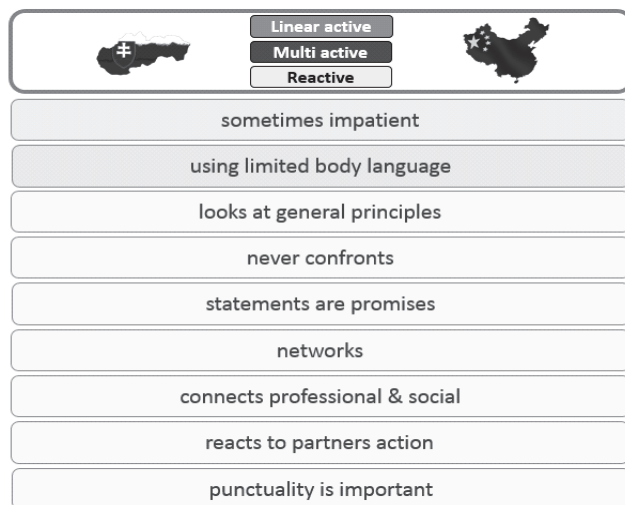
As it is shown on the screen summary (Fig. 5) above there are in total 9 common traits shared between Slovaks and Chinese. In short recapitulation we can see that 7 of all collective characteristics belong to reactive group, one is owned by multi-active type and one by linear active. The nature related to the patience from linear active cultural package has been already described. The characteristic linked to multi-active cultural package common for both countries is "using limited body language". By Chinese it is related to their character. They do not show feelings, their "face languages" is low and that's why their body language is limited as well. Slovaks have assigned themselves to the same characteristic – using limited body languages. By Slovaks it may be connected to their emotional level – the higher emotional level Slovaks are at the more body language they are using.

From the rest of common traits listed on Fig.5 has been taken punctuality as further feature for describing. Both countries described punctuality as important for them, but this tendency is more suitable for Slovaks than Chinese. Generally it can be said that Slovaks have transferred more characteristics from reactive cultural types.

Conclusion

The corporate culture represents social system which consists of people and therefore must be seen each enterprise as a social alive system. The essence required for this system in the enterprise is built from diverse employees who are unique. Their specific behavior, thoughts, beliefs, values influence and form corporate culture. All those different elements shape content and power of corporate culture. In global point of view is diversity an important factor which affects the business operation.

On the first glance we might receive an impression that China and Slovakia are from culture perspective very diverse countries. This is partly true. Overall results of the cultural analysis in selected enterprises in Slovakia and China have shown that there

are some differences but also some common traits between both nations. China and Slovakia are different in their language, religion, traditions and other characteristics but from behavioral perspective it is possible to find some common traits and match. According the results based on Lewis's model cultural typology like Slovaks as well as Chinese surveyed enterprises showed the mix of all cultural types but in parallel the results confirmed their stronger orientation according Lewis's defined types. Slovaks confirmed the orientation for multi active cultural type and Chinese for reactive.

Each culture has its specifics and should be respected. Understanding of different natures supports business success and strengthen corporate culture. In case employees understand management, follow the vision and respect values of the enterprise they feel involved, respected, connected with corporate culture. Factor just like diversity imports to the business competitive edge – influences performance and success of the enterprise in the global market.

Súhrn

Podniková kultúra predstavuje spoločenský systém, ktorý sa skladá predovšetkým z ľudí, a preto je potrebné pozerať sa na každý podnik ako sociálny, živý systém. Koncept potrebný pre takýto sociálny systém je tvorený zo zamestnancov, kde každý zo nich reprezentuje jedinečnú zložku tohto systému. Ich špecifické správanie, myšlienky, názory, hodnoty vplývajú a vytvárajú podnikovú kultúru. Všetky tieto prvky formujú obsah a silu podnikovej kultúry. Z globálneho hľadiska predstavuje diverzita dôležitý faktor, ktorý ovplyvňuje podnikateľskú činnosť.

Na prvý pohľad by sa mohlo zdať, že Čína a Slovensko sú z hľadiska kultúry dve veľmi rozdielne krajiny. Líšia sa v mnohých smeroch - jazyk, náboženstvo, tradície a pod. To je síce pravda, avšak len čiastočná. Celkové výsledky analýzy kultúrnych typov na základe správania sa vo vybraných podnikoch na Slovensku a v Číne ukázali, že medzi krajinami existujú rozdiely, no menšie než sa očakávalo. Analýzou boli dokázané aj mnohé spoločné črty ako napr. prepojenie pracovného a osobné života, vyhýbanie sa konfrontácii, vytváranie kontaktov, ktoré ako Slováci, tak aj Číňania využívajú pri plnení pracovných úloh. Na základe výsledkov Lewisovho modelu kultúrnej typológie, predstavujú slovenské, rovnako ako aj čínske dotazované podniky mix všetkých kultúrnych typov. Slováci potvrdili orientáciu na multi aktívny kultúrny typ a Číňania na reaktívny typ.

Každá kultúra má svoje špecifiká a mala by byť rešpektovaná ako celok. Pochopenie práve týchto špecifík, podporuje obchodné úspechy a posilňuje firemnú kultúru. Len v prípade, že zamestnanci chápu víziu, strategické ciele spoločnosti a rešpektujú jej hodnoty, je môžné docieliť vyváženú harmóniu spokojného zamestnanca a prosperujúceho podniku. Práve faktor diverzity predstavuje pre podnik konkurenčnú výhodu - pozitívne vplýva na jeho výkonnosť a tvorbu značky na svetovom trhu.

References

[1]   HOFSTEDE, G.; Cultures and Organizations – Software of the Mind: Intercultural Cooperation and Its Importance for Survival, McGraw-Hill Education Ltd; 3rd edition – revised edition; 2010; ISBN-13: 978-1-904838-02-9

[2]   LEWIS, R.; When Cultures Collide: LEADING ACROSS CULTURES; Printed in Finland by WS Bookwell; 3rd edition; 2006; ISBN-13: 978-1-904838-02-9

[3]   NEEDLE, D.; Business in Context: An Introduction to Business and Its Environment; 2004; ISBN 978-1861529923

[4]   RAVASI, D.; SCHULTZ, M. (2006). "Responding to organizational identity threats: Exploring the role of organizational culture". Academy of Management Journal 49 (3): 433–458.

[5]   SCHEIN, E. H.: ORGANISATIONSKULTUR; EHP, 01/2010; 3. AUFLAGE; ISBN-13: 9783897970144

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Zuzana Birknerová

REVIEW OF THE BOOK:

Lucia Zbihlejová

BEING THERE: PERSONALITY & BEHAVIOUR IN THE CONTEXT OF SOCIOPRAGMATICS

Author of the given monograph creates a complex image of a person from various viewpoints – social, pragmatic, linguistic. In this sense, the book as such may be seen as multidisciplinary; it covers the aspects of personality, behavior and linguistic politeness through detailed, structured descriptions of a single person and his (un)intentional choice of behavior. Selection of the topic should be accentuated as it is timeless despite the fact that the person selected for a sociopragmalinguistic analysis is a character from a movie filmed in 1979 (and based on the book from 1971). The monograph starts with a brief description of the story and characterization of this person, Chance, who is a simple-minded gardener unexpectedly placed in a situation which takes him to the world of wealth and prestige where even the simplest ideas and thoughts are (mis)interpreted through hidden agendas. The second and the third chapter of the book cover theoretical backgrounds to the subsequent analysis. The former describes general sociopragmatic aspects which serve as a basis to the latter chapter the focus of which is linguistic politeness – a very current issue discussed in pragmalinguistic circles.

Two views on politeness (lay and sociolinguistic) are mentioned in the book in connection to the viewpoint of mental disorder/distortion which may appear in a few different forms. The character Chance is considered to be a mentally-challenged and a socially-underdeveloped individual. Therefore it is essential that the author observes not only his speech and verbal demonstration of his personality, but also his appearance, gestures, extralinguistic behaviour and compares it to the already established theories related to how such person deals with socially accepted manners and politeness. Positive is that the author manages to create a complex basis for the analysis which represents an insight into relevant socio-pragmatic issues and issues of politeness in relation to mental or personality disorders that deviate from the so-called standard behavior norms.

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[3] STEINEROVÁ, J., 2000. Princípy formovania vzdelania v informačnej vede. In: Pedagogická revue. Roč. 2, č. 3, s. 8-16. ISSN 1335-1982.
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