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**Jaroslava Hečková**  
**Alexandra Chapčáková**

## **PRIVATE EQUITY INVESTMENTS IN CENTRAL AND EASTERN EUROPE BETWEEN 2007 - 2012**

## **PRIVATE EQUITY INVESTÍCIE V KRAJINÁCH STREDNEJ A VÝCHODNEJ EURÓPY V OBDOBÍ ROKOV 2007 - 2012**

**Abstract:** *Recent years have spurred interest in the role of private equity investment in the financing of small new firms. While banks are often reluctant to finance such firms because of high uncertainty, information asymmetry, and agency costs, private equity investors are specialized to overcome these problems through the use of staged financing, private contracting and active monitoring. This paper explores the contribution of the private equity industry to economic growth in Europe and identifies factors that significantly influence the amount of private equity investments in V4 countries. The evaluation is made on the basis of eleven selected objective factors, namely by the dependency test (correlation coefficient) of particular factors on the development of the measured aim in the period from 2007 to 2012. This article was compiled as a part of the projects VEGA No. 1/0054/14 „Research into Business Risk Controlling in the EU Aimed at Proposing Models for Enhancing Solutions and Financial Risk Forecasting of Business Entities“ and KEGA No. 032PU-4/2013 „Applying E-Learning to Teaching Economic Disciplines of the Management Study Programme and New Accredited Study Programmes at the Faculty of Management of University of Prešov in Prešov“.*

**Key words:** *Private Equity, Venture Capital, investment, GDP.*

**Kľúčové slová:** *private equity, rozvojový kapitál, investícia, HDP.*

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### **Introduction**

*Private Equity* is a form of equity investment into private companies not listed on the stock exchange. It is a medium to long-term investment, characterised by active ownership. Private equity investment provides a strategy for company growth, with agreed time limits and targets. The strategy is tailored to the entrepreneur and the stage of the business, whether it's an innovative new start-up or an established Small Medium Enterprises (SMEs) looking to take the next step in its development.

There are six generally recognised investment formats used in the private equity industry: *Seed capital* is financing provided to study, assess and develop an initial concept. *Start-up capital* is provided to companies for product development and initial marketing. *Expansion capital* provides the financing for the growth of a firm. *Replacement capital* involves the purchase of shares in an existing company from another private equity investor or shareholder. A *buy-out* involves the purchase of

all or part of a firm from existing shareholders. This may involve taking a company from quoted to unquoted status, i.e. taking it private. In a *management buy-out* the current managers are the buyers, usually with the support of private equity or venture capital.

*Venture Capital* describes investment in unquoted companies (i.e. companies not listed on a stock exchange) by venture capital firms which, acting as principals, manage individual, institutional or in-house money. The main financing stages are early stage (covering seed capital and start-up), and expansion. Venture capital is thus professional equity co-invested with the entrepreneur to fund an early stage or expansion venture. Offsetting the high risk the investor takes is the expectation of higher than average returns on investment.

Strictly defined, venture capital is a subset of Private Equity. Private equity firms may engage in venture capital activities but their scope goes beyond the venture capital subset to include the provision of replacement capital and the financing of buy-outs (Official Journal of the European Union, 2009).

Recent years have spurred interest in the role of private equity investment in the financing of small new firms. While banks are often reluctant to finance such firms because of high uncertainty, information asymmetry, and agency costs, private equity investors are specialized to overcome these problems through the use of staged financing, private contracting and active monitoring. These unique features make them more likely to finance early stage and technology companies than banks (Popov, A., Roosenboom, P., 2009, p. 5).

Since 2007, European private equity has backed in excess of 21,000 portfolio companies, to the tune of more than EUR 271 billion. Most private equity investments, around 85 %, are into SMEs. Private equity contributes to the creation of up to 5,600 new businesses in Europe each year. But big numbers don't help us understand the hands-on nature of this kind of investment in European companies both, large and small, old and new. Business Builders aims to bring you right up close to companies building a healthy and more valuable future, with private equity partners involved every step of the way (<http://evca.eu/business-builders>).

Private equity has been the subject of a significant number of professional and academic studies. While the profit motive of private equity capitalists has been discussed to great lengths in the media over the past years, recent empirical literature has suggested that this "new" type of finance also has real effects. Namely, it has been argued that venture capital represents an important engine for the Schumpeterian process of "creative destruction", and that it is a major force in transforming scientific knowledge into commercial output. This effect has come both through the impact of venture capital on existing industries and through its role in creating and developing entirely new industries.

This paper explores the contribution of the private equity industry to economic growth in Europe and identifies factors that significantly influence the amount of private equity investments in V4 countries. The evaluation is made on the basis of eleven selected objective factors, namely by the dependency test (correlation

coefficient) of particular factors on the development of the measured aim in the period from 2007 to 2012.

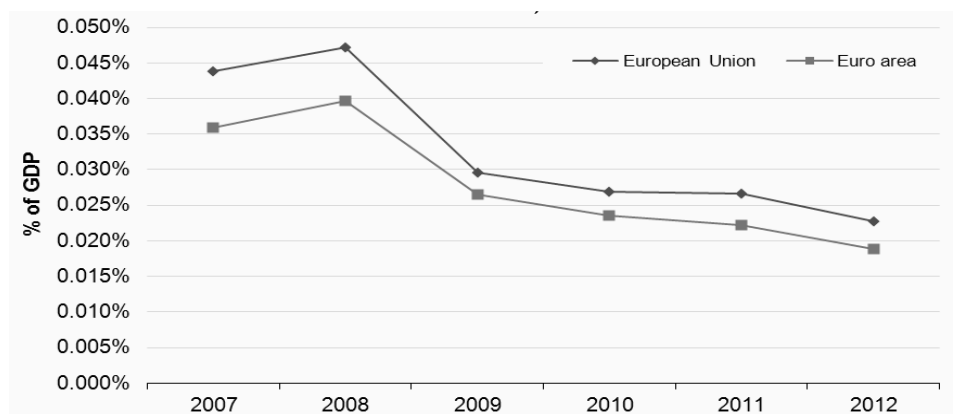
The base data for the estimates is sourced from Eurostat, The World Economic Forum, the International Bank for Reconstruction and Development, the World Bank and the European Private Equity and Venture Capital Association (EVCA).

### **Total private equity investment (% of GDP); total available EU countries data from 2007 to 2012**

The private equity investment activity is measurable by several methods. One of standard methods is a ratio of actually carried out private equity investments to total gross domestic product (GDP) of the given state in the given year. Their advantages include relatively simple explicability, the elimination of size differences between states and data availability. This indicator may subsequently be compared with other states and thus a real mutual comparison of private equity investments activity in particular national markets is feasible.

Aggregate data for the EU as a whole and the Eurozone as a subset show a continuation of the pattern which has been clear since the financial crash in 2008, with further declines in both indices relative to GDP (Figure 1). In 2011 the decline in venture capital investment as a proportion of GDP in the EU as a whole appeared to be levelling off, while contraction continued in the Eurozone area. However, during 2012 the pace of decline increased in both areas. This negative 'catch-up' relative to the Eurozone was likely driven by declines in venture investment in the leading non-Euro economies: Sweden, Denmark and the United Kingdom.

Figure 1 Total private equity investment (% GDP) 2007 - 2012



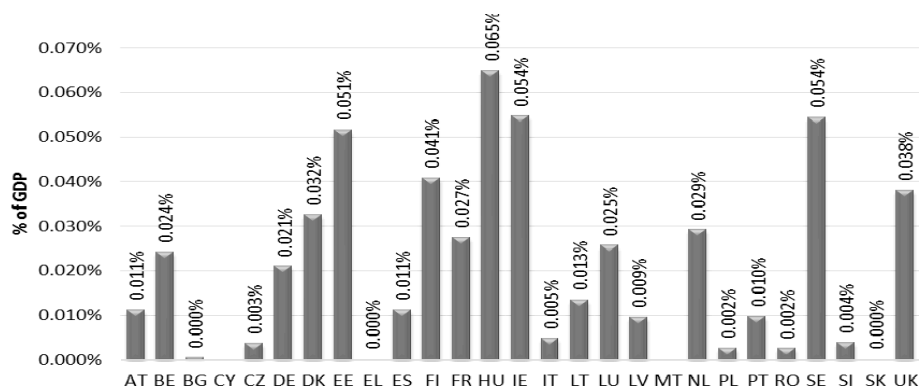
Source: European Commission, 2013

### **Total private equity investment (% of GDP); available EU countries data in 2012**

Total private equity investment (encompassing both early stage venture capital funding and later, usually larger deals such as management buy-outs) totalled EUR 36.5 billion in nearly 5,000 European businesses, of which EUR 3.2 billion were

venture capital investments in 2,900 companies. While the number of venture-backed companies remained stable, aggregate funding was modestly down compared with the previous year and markedly down compared with the height of the financial boom (2008: EUR 6.3 billion). As noted in the analysis of 2011 data, venture investment will only ever be appropriate for a small minority of firms with exceptional growth prospects over the short to medium term. Given continuing uncertainties in the Eurozone in particular, it is perhaps not surprising that overall business sentiment has not favoured investment in higher-risk/higher reward opportunities. However, since venture-backed firms have the potential to form the kernel of economic growth in key sectors and clusters, a decline in venture investment may be an early indicator of continuing low growth prospects in the shorter term, or at least lack of business confidence (European Commission, 2013).

Figure 2 Total private equity investment (% GDP) in 2012



Source: European Commission, 2013

Looking at investment on a country-by-country basis scaled to GDP (Figure 2), the United Kingdom, Sweden and Ireland continue to perform well, though less well than in 2011. Finland and Denmark, previously among the leaders, have dropped back. Estonia (0.051 %) has climbed to be almost on a par with Ireland and Sweden (0.054 % each) and pulled ahead of the United Kingdom (down from 0.045 % to 0.038 %). Estonian performance may reflect broader economic changes, including labour market flexibility; despite continuing high unemployment, GDP has grown by more than 15 % since the crash of 2008. The Estonian economy is smaller ( EUR 19,237.5 million) than that of Latvia (EUR 24,576.1 million) or Lithuania (EUR 36,654.2 million), but it has pulled ahead proportionately in terms of venture investment despite relative improvement in the Lithuanian position (0.013 %, up from 0.009 %). The standout performer in venture investment relative to GDP was Hungary. Already above the EU average in 2011 at 0.040 % of GDP, it rose to 0.065 % in 2012. It is probable that Hungary is beginning to see the benefit of the Szechenyi plan, an allocation of 45 billion HUF ( $\pm$  EUR 0.15 billion) aimed at improving access to capital for SMEs in start-up and growth phases, of which 80 % has been made available to the New Hungary Venture Capital Programme. New



funds were formed with effect from early 2010, with investments now being made in qualifying companies (European Commission, 2013).

### **Total private equity investment in Central and Eastern Europe**

The region of Central and Eastern Europe (CEE) represents over EUR 1.2 trillion of combined GDP and a population of more than 160 million people. Investment activity in the CEE region currently represents 2.8 % of the total investment value in Europe.

Private equity investment activity is concentrated in a few countries in the CEE region: Poland, the Czech Republic, Hungary, Slovakia and Bulgaria accounted for 86 % of investments by value and 63 % by number of companies. Notably, Romania and Ukraine saw their investment amounts fall to some of the lowest levels of the past few years (see Table 1).

Poland was the largest CEE private equity investment market, accounting for 47 % of the total amount invested in the region in period of 2007 to 2012. Polish companies attracted EUR 478 million of investment in 2012, a 30 % decrease from 2011 and 2010 (EUR 678 and 657 million). However, the number of Polish companies financed grew by 36 % to 75 (vs. 55 in the previous year). With EUR 291 million of buyout investments (44 % of the region), Poland remained the largest buyout market in CEE, as has been the case since 2010. Poland was also the largest market for growth investments in 2012 at EUR 144 million, comprising 70 % of this type of investment across the region. At only EUR 9 million, venture investments in Poland were surprisingly low in 2012, but financed 32 companies, the most in a single year since 2008.

The Czech Republic (EUR 106 million) and Hungary (EUR 101 million) came next in the investment ranking in 2012. The value of investments in the Czech Republic and in Hungary dropped in 2012 by 26 % (EUR 143 million) and 48 % respectively (EUR 194 million), compared to 2011. The decrease in the Czech Republic was fairly homogenous among the stages of investment, while in Hungary buyout investments decreased by 78 % and venture investments grew by 61 %. As a result, in 2012 Hungarian venture capital investments comprised a significant majority (i.e. 63 %) of all venture investment activity across the region. The number of companies financed in the Czech Republic dropped to 10 in 2012, while in Hungary it grew to 42, thanks to a significant increase in venture-backed companies (up from 29 to 40). Slovakia (EUR 98 million) and Bulgaria (EUR 84 million) both showed significantly higher levels of investment in 2012 compared to 2011 (9 and 7 million). Thanks to a small number of sizeable buyout transactions, Slovakia recorded its highest amount of investment for at least the last six years and Bulgaria was back in line with its historical level of investment after a very low level of investment in 2011. The number of companies financed in these countries was low at six in Slovakia and five in Bulgaria.

It should be noted that year-on-year changes in the reported investment amounts for individual CEE countries may be directly affected by a limited number of large transactions in a particular country. Furthermore, private equity fund managers in CEE mostly operate on a regional basis and complete transactions in those countries

where they believe the particular deals are most attractive, which can also account for shifts between countries in a given year.

Table 1 shows details of private equity investment value, table 2 as a percentage of the private equity investment of GDP in particular states of the CEE in the period 2007 - 2012. Private equity investments participate only in a small extent in the total GDP production in the European environment. United Kingdom, France, Luxembourg and Sweden are the private equity leaders in Europe in the period from 2007 to 2012.

Table 2 data shows considerable unevenness among particular states in region. In 2012, the ratio of private equity investment value to GDP in the CEE region was 0.082 % compared to the Europe-wide average of 0.260 %. Total investment as a percentage of GDP dropped for both Europe overall and the CEE region in comparison to 2011, when the ratio was 0.104 % for the CEE region and 0.328 % for Europe. The CEE level in 2012 remained at approximately one third of the European level. This continuing gap is in line with the historical trend of the CEE region's investment levels and indicates the region's long-term potential for further private equity development as it is still under-invested compared to Europe. Bulgaria, Slovakia and Poland showed the highest ratio investment vs. GDP of the CEE region in 2012, but all remained below the Europe-wide average.

Table 1 Private equity investment by amount (in EUR x 1,000) in CEE (2007 – 2012)

	Total Investment (in EUR x 1,000)					
	2007	2008	2009	2010	2011	2012
Bosnia – Herzegovina	456	4,208	6,267	0	0	0
Bulgaria	563,374	90,477	184,003	82,238	7,225	84,164
Croatia	7,150	100,875	28,154	12,500	15,625	32,299
Czech Republic	182,368	434,553	1,396,299	192,973	143,933	105,874
Estonia	36,316	14,972	4,507	26,382	6,508	18,630
Hungary	214,682	476,104	213,637	65,046	194,841	101,455
Latvia	23,654	63,084	997	5,280	20,222	3,802
Lithuania	151,661	0	1,183	1,604	26,671	7,651
Macedonia	13,500	0	14,388	0	0	0
Moldova	15,050	0	0	10,860	975	0
Montenegro	0	25,000	0	0	0	0
Poland	440,715	633,210	268,094	657,002	678,436	477,615
Romania	318,089	289,371	220,881	119,138	65,918	26,506
Serbia	105,718	8,402	0	13,208	0	4,350
Slovakia	24,700	31,145	0	14,473	9,149	97,848
Slovenia	1,554	2,853	79,130	6,945	14,089	3,508
Ukraine	245,021	305,745	38,244	95,827	63,309	43,314
<b>Total CEE</b>	<b>2,344,007</b>	<b>2,479,998</b>	<b>2,455,783</b>	<b>1,303,476</b>	<b>1,246,901</b>	<b>1,007,015</b>
<b>Total Europe</b>	<b>71,445,012</b>	<b>52,674,787</b>	<b>22,690,468</b>	<b>41,689,066</b>	<b>44,870,147</b>	<b>36,459,491</b>

Source: EVCA, 2010, 2011, 2012b, 2013

Table 2: Private equity investment as a percentage of GDP in CEE (2007 – 2012)

	2007	2008	2009	2010	2011	2012
Bosnia – Herzegovina	0.004	0.036	0.052	0	0	0
Bulgaria	1.950	0.265	0.543	0.229	0.019	0.211
Croatia	0.017	0.213	0.061	0.027	0.035	0.073
Czech Republic	0.143	0.294	1.017	0.124	0.092	0.069
Estonia	0.232	0.093	0.033	0.184	0.041	0.109
Hungary	0.208	0.422	0.223	0.067	0.194	0.103
Latvia	0.111	0.273	0.005	0.029	0.100	0.017
Lithuania	0.531	0	0.004	0.006	0.086	0.023
Macedonia	0.233	0	0.217	0	0	0
Moldova	0.462	0	0	0.243	0.019	0.020
Montenegro	0	0.809	0	0	0	0
Poland	0.141	0.167	0.089	0.186	0.183	0.125
Romania	0.239	0.205	0.189	0.098	0.049	0.020
Serbia	0.649	0.049	0	0.045	0	0.014
Slovakia	0.040	0.046	0	0.022	0.013	0.137
Slovenia	0.004	0.008	0.227	0.020	0.039	0.010
Ukraine	0.230	0.232	0.045	0.092	0.053	0.033
<b>Total CEE</b>	<b>0.190</b>	<b>0.201</b>	<b>0.239</b>	<b>0.115</b>	<b>0.104</b>	<b>0.082</b>
<b>Total Europe</b>	<b>0.570</b>	<b>0.394</b>	<b>0.181</b>	<b>0.320</b>	<b>0.328</b>	<b>0.260</b>

Source: EVCA, 2010, 2011, 2012b, 2013

In 2012, the CEE region's structure of investments by type broadly matched that of Europe overall, with the exception, as in prior years, that CEE had a higher proportion of growth capital investments. The growth segment accounted for 20 % of CEE investments in 2012 vs. 10 % in Europe. This is natural and is likely to continue as CEE fund managers are generally focused on growth companies in the higher growth CEE economies. Otherwise, Europe showed a higher percentage of buyouts at 77 % versus 65 % for CEE. For the first time since recording CEE investment activity, CEE showed an overall higher percentage of investments in the venture segment than was seen across all of Europe, with 10.2 % vs. 8.7 %, respectively. The relatively strong proportion of venture investing in certain countries of the CEE region in 2012 was supported by certain EU-driven government programs (for example, the Jeremie program) that have brought needed funding to the venture segment over the past couple years (EVCA, 2013, p. 14-18).

## Methodology

The aim of our empirical research is to identify factors that significantly influence the private equity investment amount in V4 countries. The evaluation is carried out on the basis of objective factors, namely by the dependency test (correlation coefficient) of individual factors on the development of measured aim in the period of 2007 to 2012.

We expect following statistically significant factors (determinants) influencing the private equity investments - foreign direct investments, net inflows, private debt, burden of government regulation, venture capital availability, effect of taxation on incentives to invest, entrepreneurial environment level, ease of access to loans, nature of competitive advantage, company spending on R&D, starting a business – number of procedures and strength of investor protection index.

There were eleven tested objective factors selected on the basis of the given study that are the subject of our empirical research with the aim to confirm or disprove the influence of particular factors on the private equity investments amount in V4 countries.

The final output is Table 3 that compares the weight of dependency of private equity/GDP metrics on particular factors by a simple linear regression – the determination coefficient by the reason of limited number of data. The closer the value is to 1, the larger is the dependency weight and the determinant more intensively influences the private equity amount. The causality is guaranteed owing to the selection of all factors from one research.

To deduce the conclusions from the data collected, the following basic statistical tests were carried out:

- correlation coefficient -  $r$
- determination coefficient -  $r^2$
- correlation coefficient significance -  $t$
- $p$  – value for this test -  $p$
- estimations of regression coefficients  $b_0$  and  $b_1$ , where  $y = b_0 + b_1x$

Examination of particular factors:

- foreign direct investments, net inflows (% of GDP) - (Eurostat),
- private debt (% of GDP) – (Eurostat),
- burden of government regulation - (The Global Competitiveness Report),
- venture capital availability - (The Global Competitiveness Report),
- effect of taxation on incentives to invest - (The Global Competitiveness Report),
- entrepreneurial environment level - (Doing Business),
- ease of access to loans - (The Global Competitiveness Report),
- nature of competitive advantage - (The Global Competitiveness Report),
- company spending on R&D - (The Global Competitiveness Report),
- starting a business – number of procedures - (Doing Business),
- strength of investor protection index - (Doing Business).

## Results

Selected the first factor, foreign direct investments - net inflows - (% of GDP), is influenced by the outbreak of the financial crash in 2008. Source data were obtained from the Eurostat database. Foreign direct investments as % of GDP fluctuated in the period under research in V4 countries. In 2012, for example fell in the Slovak Republic and Poland, the opposite course was recorded in the Czech Republic and

Hungary. In Hungary even in the last two years studied reached a record high value, 3.8 % of GDP in 2011 and 10 % of GDP in 2012.

The second factor is private debt (% of GDP). The most indebted country is Hungary in the period under research. The amount of private debt reached 111.1 % of GDP in 2007, 139.8 % GDP in 2008, 149.1 % of GDP in 2009, 133.3 % of GDP in 2010, 147.2 % of GDP in 2011 and 2012 131 % of GDP in 2012. In the Czech Republic increased private debt from 60.7 % of GDP in 2007 to 72.4 % in 2012. The Slovak Republic in private debt rose from 63.2 % in 2007 to 73.1 % in 2012. The similar situation is in Poland (from 55.2 % of GDP in 2007 to 74.7 % of GDP in 2012).

Burden of government regulation was chosen as a third factor. Compared to other European countries and according to the World Economic Forum data, V4 countries are ranked as the states with high burden of government regulation in the given period. The trend continues to worsen.

Venture capital availability factor is measured by the World Economic Forum. The Slovak Republic was ranked 40th in 2007, 41st in 2008, 61st in 2009, 68th in 2010, 60th in 2011 and 64th in 2012 among 150 countries of over the world. The Czech Republic was ranked as it follows: 68th in 2007, 55th in 2008, 63rd in 2009, 85th in 2010, 84th in 2011 and 74th in 2012. The ranking of Poland – 50th in 2007, 44th in 2008, 56th in 2009, 79th in 2010, 90th in 2011 and 104th in 2012. Hungary – 82nd in 2007, 94th in 2008, 105th in 2009, 117th in 2010, 115th in 2011 and 122nd in 2012.

Effect of taxation on incentives to invest was chosen as a fifth factor. The Slovak Republic was ranked 17th in 2007, 18th in 2008, 27th in 2009, 49th in 2010, 66th in 2011 and 122nd in 2012 among 150 countries of over the world. The Slovak Republic was ranked best among V4 countries in the given period. The Czech Republic was ranked as it follows: 61st in 2007, 45th in 2008, 49th in 2009, 57th in 2010, 105th in 2011 and 132nd in 2012. The ranking of Poland – 128th in 2007, 110th in 2008, 107th in 2009 - 2010, 96th in 2011 and 116th in 2012. Hungary – 133rd in 2007, 132nd in 2008, 138th in 2009, 131st in 2010, 134th in 2011 and 135th in 2012.

The entrepreneurial environment level factor which is probably one of key indicators of private equity investments amounts is examined by the World Bank ranking of V4 countries reported by Doing Business reports. The Slovak Republic was ranked 36th in 2007, 32nd in 2008, 42nd in 2009, 41st in 2010, 48th in 2011 and 37th in 2012 among 180 countries of over the world. Despite the fact that it was ranked best among V4 countries in the given period, the trend continues to worsen. The Czech Republic was ranked as it follows: 52nd in 2007, 56th in 2008, 75th in 2009, 74th in 2010, 63rd in 2011 and 64th in 2012. The ranking of Poland improved year by year within the period under assessment (75th in 2007, 74th in 2008, 76th in 2009, 72nd in 2010, 70th in 2011 and 62nd in 2012). Hungary reports a fluctuating trend (66th in 2007, 45th in 2008, 41st in 2009, 47th in 2010, 46th in 2011 and 51st in 2012).

Ease of access to loans was chosen as a seventh factor. The Slovak Republic is the country with the easiest access to loans between V4 countries and was ranked 20th in 2007, 22<sup>nd</sup> in 2008, 43rd in 2009, 55th in 2010, 58th in 2011 and 49th in 2012. The similar situation is in the Czech Republic (48th in 2008, 37th in 2009, 47th in 2009, 60th in 2010, 66th in 2011 and 58th in 2012). Poland is as follows: (68th in 2007, 61st in 2008, 59th in 2009, 71st in 2010, 89th in 2011 and 97th in 2012). Hungary has, contrarily to other V4 countries, difficult access to loans (74th in 2007, 79th in 2008, 86th in 2009, 93rd in 2010, 114th in 2011, 123rd in 2012).

Nature of competitive advantage is the eighth factor measured by the World Economic Forum. The Slovak Republic was ranked 107th in 2007, 99th in 2008, 97th in 2009, 113th in 2010, 115th in 2011 and 126th in 2012 among 150 countries of over the world. The Czech Republic was ranked as it follows: 48th in 2007, 35th in 2008, 42nd in 2009, 38th in 2010, 36th in 2011 and 38th in 2012. The Czech Republic was ranked best among V4 countries in the given period. The ranking of Poland continues to worsen – 59th in 2007, 53rd in 2008, 57th in 2009, 70th in 2010, 89th in 2011 and 95th in 2012). Hungary – 61st in 2007, 56th in 2008, 64th in 2009, 63rd in 2010, 71st in 2011 and 88th in 2012.

Company spending on R&D is the ninth factor measured by the World Economic Forum. The Slovak Republic was ranked 55th in 2007 and 2008, 68th in 2009, 89th in 2010, 85th in 2011 and 94th in 2012 among 150 countries of over the world. The Czech Republic was ranked as it follows: 26th in 2007, 25th in 2008 - 2009, 28th in 2010 and 2011 and 32nd in 2012. Despite the fact that it was ranked best among V4 countries in the given period, the trend continues to worsen. The ranking of Poland and Hungary reports a fluctuating trend within the period under assessment. Poland – 65th in 2007, 57th in 2008, 61st in 2009, 80th in 2010, 88th in 2011 and 103rd in 2012). Hungary – 83rd in 2007, 85th in 2008, 75th in 2009, 81st in 2010, 103rd in 2011 and 108th in 2012).

Starting a business – number of procedures – is factor examined by the World Bank reported by Doing Business reports. Number of procedures for starting a business increased from six in period 2007 – 2011 to seven in 2012 in the Slovak Republic. Number of procedures in the Czech Republic increased from seven in 2007 to nine in 2012. The opposite trend observed in Poland, number of procedures decreased from ten in 2007 to four in 2012. Number of procedures for starting a business in Hungary is four in the period under research.

The World Bank examines and presents through Doing Business reports the investment protection factor. The Slovak Republic scored 4.7 point in 2007 – 2012, the Czech Republic scored 5 points, Poland scored 6 points and Hungary 4.3 point at the 10-point scale in the period under research.

Table 3 Statistical Testing of Factors – Results

Variables X & Y	V4 countries, correlation (data), Marked correlations are significant at the level of $p < .05000$								
	Mean	Standard deviation	r (X,Y)	r <sup>2</sup>	t	p	N	Const. dev.: Y	Direct. depend.: Y
x1	2.11739	0.940818							
y	2.12608	3.891041	0.479031	0.229470	2.500796	0.02074	23	-2.6884	1.981178
x2	85.6125	30.30878							
y	1.9667	3.88483	-0.489155	0.239272	-2.63053	0.01527	24	7.3343	-0.062697
x3	123.000	13.02840							
y	1.9667	3.88483	-0.364230	0.132663	-1.83439	0.08015	24	15.3253	-0.108607
x4	48.4583	27.91911							
y	1.9667	3.88483	-0.246145	0.060587	-1.19117	0.24628	24	3.6264	-0.034250
x5	92.2917	41.67940							
y	1.9667	3.88483	-0.298372	0.089026	-1.46628	0.15672	24	4.5333	-0.027810
x6	4.4667	0.21400							
y	1.9667	3.88483	0.184785	0.034145	0.88190	0.38736	24	-13.0165	3.354430
x7	65.7083	25.69635							
y	1.9667	3.88483	-0.341391	0.116548	-1.70362	0.10253	24	5.3580	-0.051612
x8	71.6667	27.84377							
y	1.9667	3.88483	0.198939	0.039577	0.95214	0.35137	24	-0.0225	0.027756
x9	66.6250	27.31589							
y	1.9667	3.88483	-0.075757	0.005739	-0.35636	0.72496	24	2.6845	-0.010774
x10	6.2917	1.94443							
y	1.9667	3.88483	0.201646	0.040661	0.96564	0.34472	24	-0.5681	0.402875
x11	5.0000	0.64201							
y	1.9667	3.88483	0.365734	0.133762	1.84314	0.07882	24	-9.0987	2.213080

Source: Own elaboration

- *Foreign direct investments, net inflows (% of GDP)*: - private equity / GDP = - 2.6884 + 1.981178x  
The model explains statistically medium - significant variability of 22.95 % of variable y into x.
- *Private debt (% of GDP)*:- private equity / GDP = 7.3343 – 0.062697x  
The model explains statistically medium - significant variability of 23.93 % of variable y into x.
- *Burden of government regulation*: - private equity / GDP = 15.3253 – 0.108607x  
The model explains statistically medium - significant variability of 13.26 % of variable y into x.
- *Venture capital availability*: - private equity / GDP = 3.6264 – 0.034250x

The model explains variability of small statistical significance of 6.06 % of variable y into x.

- *Effect of taxation on incentives to invest:* - private equity / GDP =  $4.5333 - 0.027810x$

The model explains variability of small statistical significance of 8.90 % of variable y into x.

- *Entrepreneurial environment level:* - private equity / GDP =  $-13.0165 + 3.354430x$

The model explains variability of small statistical significance of 3.41 % of variable y into x.

- *Ease of access to loans:* - private equity / GDP =  $5.3580 - 0.051612x$

The model explains statistically medium - significant variability of 11.65 % of variable y into x.

- *Nature of competitive advantage:* - private equity / GDP =  $-0.0225 + 0.027756x$

The model explains variability of small statistical significance of 3.95 % of variable y into x.

- *Company spending on R&D:* - private equity / GDP =  $2.6845 - 0.010774x$

The model explains variability of small statistical significance of 0.5739 % of variable y into x.

- *Starting a business – number of procedures:* - private equity / GDP =  $-0.5681 + 0.402875x$

The model explains variability of small statistical significance of 4.07 % of variable y into x.

- *Strength of investor protection index:* - private equity / GDP =  $-9.0987 + 2.213080x$

The model explains statistically medium - significant variability of 13.37 % of variable y into x.

## Conclusion

Aggregate data for the EU as a whole and the Eurozone as a subset show a continuation of the pattern which has been clear since the financial crash in 2008, with further declines in both indices relative to GDP (Figure 1). In 2011 the decline in venture capital investment as a proportion of GDP in the EU as a whole appeared to be levelling off, while contraction continued in the Eurozone area. However, during 2012 the pace of decline increased in both areas. This negative 'catch-up' relative to the Eurozone was likely driven by declines in venture investment in the leading non-Euro economies: Sweden, Denmark and the United Kingdom. V4 countries significantly fall behind the average of the European Union in the private equity investments implemented to GDP ratio.

The empirical research carried out by the statistical survey using simple linear regression confirmed, that the significant factors that influenced private equity investment implementation in V4 countries in the period 2007 - 2012 included



private debt (as % of GDP), foreign direct investments - net inflows (as % of GDP) and investor protection factors.

## Súhrn

Súhrnné údaje za EÚ ako celok a Eurozónu ako jej súčasť poukazujú na pokračovanie trendu začatého finančnou krízou v roku 2008, a to na pokles private equity investícií k HDP (Obrázok 1). V roku 2011 sa objavil pokles private equity investícií v pomere k HDP v EÚ ako celku, ktorý sa v ďalšom období ustálil, zatiaľ čo pokles v Eurozóne pokračoval. Avšak v priebehu roka 2012 sa pokles objavil opäť v oboch oblastiach. Tento negatívny "catch - up" vo vzťahu k Eurozóne bol pravdepodobne ťahaný poklesom investícií rozvojového kapitálu v líderských ekonomikách nečlenských štátov Eurozóny: Švédsku, Dánsku a Veľkej Británii. Krajiny V4 signifikantne zaostávajú za priemerom Európskej únie v pomere objemu realizovaných private equity investícií k HDP.

Empirický výskum realizovaný prostredníctvom štatistického zisťovania pomocou jednoduchej lineárnej regresie potvrdil, že signifikantnými faktormi, ktoré ovplyvnili realizáciu private equity investícií v krajinách V4 v období rokov 2007 až 2012 patrili výška súkromného dlhu (v % HDP), intenzita priamych zahraničných investícií a faktor ochrany investorov.

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## **SOCIAL INTELLIGENCE AND MACHIAVELLISM IN MANAGERIAL WORK OF HEADMASTERS\***

### **SOCIÁLNA INTELIGENCIA A MACHIAVELLIZMUS V MANAŽÉRSKEJ PRÁCI RIADITEĽOV ŠKÔL\***

**Abstract:** *In this article our attention is paid to social intelligence which we consider to be a meaningful and important competence of managerial work of headmasters. This competence is connected to efficiency of their work and at the same time it could be also one of the important predictors for recruitment of people for the headmaster position. In the presented research on social intelligence we were examining the context of machiavellism or, in other words, behavior expressed machiavellistically in the case of these managers. Results of the presented research proved the existence of significant interconnections among the social intelligence attributes and the selected machiavellistic expressions in the behavior of headmasters. From the viewpoint of the ethical context we proved the assumption that social intelligence is not an ethical category.*

**Key words:** *social intelligence, machiavellism, management, education*

**Kľúčové slová:** *sociálna inteligencia, machiavellizmus, manažment, vzdelávanie*

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#### **Introduction**

School environment is one of the typical examples of occurrence of various social situations in which the social content, contact of people, plays an important role at the origin of the problem, during searching for solutions and in the subsequent influence of the results of this solution on individuals, as well as on the whole organization. A decisive role in effective solving of the problems emerging in these situations is played by the headmaster as a manager and a teacher in one person. Social intelligence in this context represents an important personality characteristic of the headmaster connected to the fulfillment of pedagogical tasks as well as the duties of the school manager. An objective of the presented study is to draw near the subject of social intelligence as one of the types of intelligence. Subsequently, on the basis of a correlation analysis between social intelligence and machiavellistic manifestations in the behavior of headmasters, another goal is to specify interconnections among the selected attributes of social intelligence and the aforementioned forms of behavior of the school headmasters.

## Social intelligence

Molčanová, Baumgartner, Kaňuková (2007) claim that social intelligence is a concept with a possible considerable use in practice, for example, as a factor which influences the performance and successfulness at school, work and in the relationships of partners and friends, etc. Also for this reason, the issue of social intelligence has become a focus of attention in many areas of research and theory.

In the context of considering the autonomous forms of intelligence, since 1920s there have been ideas about the existence of social intelligence when Thorndike (1920) defined it as an ability to understand and cope with other people and act wisely in interpersonal relationships. From this context it is obvious that social intelligence is a real individual characteristic specified primarily positively in both the ethical and pro-social contexts. In spite of the long period of discussions about this form of intelligence, when trying to define it more precisely we encounter certain difficulties (Silvera, Martinussen, Dahl, 2001).

Discussions about social intelligence are closely associated with a much more general discussion about the questions on definitions of intelligence, its research and procedures of its measuring. On the basis of the answers of psychologists to the questions such as “how do you understand the notion of intelligence” and how to study intelligence, which were formulated in Journal of Educational Psychology, and opinions of Sternberg and Detterman (1986), Ruisel (2003) pointed to the apparent diffusion in understanding of the term intelligence also within the professional community of psychologists. This state seems to be a consequence of:

- a conviction that intelligence is a quality of the mind;
- a conviction that intelligence is an individual and unique quality;
- a conviction that intelligence precisely copies the course of logical operations.

However, according to Ruisel (2003), intelligence:

- markedly regulates also the real behavior, and therefore it is inevitable to take into consideration the qualities such as effectiveness and usefulness of what people do or what they would like to do;
- represents a heterogeneous entity, a complex of numbers of items;
- does not act only as a cognitive quality;
- intelligent behavior is related also to the conative, affective, personality, or social factors.

Rich discussions, which were developed within the issue of social intelligence, bring the attention of authors to at least four areas of issues:

1. Distinguishing and specifying the definition of social intelligence in relation to the similar, related areas of knowledge.
2. Determination of the structural elements of social intelligence.
3. Personality and psychometric approach to studying and detecting social intelligence.
4. Ethical context of social intelligence implications in practical life.

Conceptualization of the notion of social intelligence points to one of the essential questions discussed in relation to social intelligence since its origin – distinguishing

social intelligence from other similar constructs (academic intelligence, emotional intelligence, practical intelligence, or, for example, also communication and social influence) and in connection to this matter also definition of the possibilities and procedures of its detection.

Although some studies did not prove the existence of differences between social and academic intelligence, there do exist certain studies (Ford, Tisak, 1983), which recognized these differences or specified those dimensions of social and academic intelligence, where a correlation was recognized, contrarily to those dimensions, where such correlation was not confirmed (Makovská, Kentoš, 2006).

The existence of social intelligence is supported also by Gardnerov's (1993) opinion, according to which it is impossible to think only about one and only intelligence, but contrarily, it is necessary to specify the particular types of intelligence based on the evolution characteristics or brain systems. In the context of managerial work, Albrecht (2006) also accentuates several types of intelligence as he specifies six types of intelligence (abstract, social, practical, emotional, aesthetic and kinesthetic).

On the contrary, the close relation of social intelligence to emotional intelligence was pointed out by Bar-On (2006), who claims that it is a description of two aspects of the same construct and consequently he states that the majority of existing definitions of social and emotional intelligence contain one or more of the following qualities:

1. To understand and constructively express emotions.
2. To understand experiencing of other people and create cooperative interpersonal relationships.
3. Effectively manage and regulate emotion.
4. To realistically master new situations and solve problems of personal or interpersonal substance.
5. To be optimistic, positively tuned and inwardly motivated to formulate and reach own goals.

Contrarily to opinions presented by Bar-On (2006), Goleman (2006), who contributed primarily to expansion of the interest in the area of emotional intelligence, nevertheless noticed the differences in definitions of emotional and social intelligence. He specifies the mentioned differences as self management and management of relations and at the same time recognizes self-consciousness at the level of emotional intelligence, and social awareness (empathy, social cognitions) at the level of social intelligence.

A specific area in the case of prediction and explanation of human behavior is created by interpersonal situations and human behavior in these situations, or, in other words, managing and solving the problems in which an important role is played by the factor of social contacts among people in the areas such as trade, production, education, at home, among friends, etc. One of the substantial characteristics, which is used for description and prediction of such behavior, is, as it was already mentioned, social intelligence.

An area of issues connected to the ethical nature of social intelligence is discussed less. In the common, everyday language, „socially intelligent behavior“ is more or

less automatically evaluated as pro-social, moral, ethical. We presume that the social intelligence construct may be a predictor of both the ethical and unethical actions (acc. to Birknerová, Ištvaníková, Janovská, 2009). Kosmitzki, John (1993) and Kaukiainen et al. (1999) assume that social intelligence is neutrally charged, and one of its components is also usage of the social techniques for manipulation of others, therefore it is a construct which may be used in a socially positive as well as socially negative sense. Social intelligence is in this context located in the space between the personality traits of pro-social behavior and the area closely connected for example to machiavellian intelligence (Ruisel, 2003, Wróbel, 2008, Andrew et al., 2008, etc.).

## **Machiavellism**

The concept of „machiavellism“ or also „Machiavellian syndrome“ was derived from the name of an Italian renaissance politician Niccoló Machiavelli in connection to his ideas primarily mentioned in the book titled *The Prince*. It is related mainly to the behavior strategy which includes manipulation of others for reaching personal goals, improving and maintaining power over others. Behavior of persons with high scores gained from the machiavellism test is cool, contains intentional lies, blandishments (Grams, Rogers, 1989) and lack of morale. Often these tactics are set against the interests of others. Machiavellists dislike cooperation with others, they lack empathy (Andrew et al., 2008) and strongly pursue their aims.

On the basis of defining social intelligence, Ruisel (2003) mentions machiavellian intelligence including manipulation of others. Goleman (1997) states that many psychologists, in relation to the intelligence in interpersonal relationships, maintain a more cynical attitude, they considered it as an ability to manipulate with others in order to have them work for you regardless to their own interests. The essence of manipulation is to influence people and the social impact. According to Wróbel (2008), this influence consists in that the manipulator uses own knowledge about the rules of human conduct and tries to develop the desired impact on another person or group of people without having them realize that they are being deliberately influenced. He claims that the interest of an individual is not always identical with the interest of the society.

Byrne, Whiten (1988, In Calvin, 2000) label machiavellian intelligence as an ability to successfully deliberately manipulate the participants in a social interaction for the purpose of reaching their own, usually egoistically and power-motivated goals. They base their claims on ethnologic studies of social behavior of primates in their natural life conditions, where a complicated structure of their social hierarchy was discovered along with the complex, exactly defined, power-oriented, competitive and cooperative relationships. Among these there belongs, for example, discovering the ability to purposefully and deliberately lie to the members of their own social group. In this context it could be discussed to what extent it is possible to transfer these findings to human behavior.

Machiavellian personality has four major characteristics, such as a relative deficit of emotions in interpersonal relationships, lack of interest in conventional morale, expressive psychopathology of personality, and small allegiance to the ideology

(Christie, 1970). In psychology, a machiavellist is considered to be a person who, in order to reach their own (or even mutual) goal, willingly commits a morally dubious act, such as lying or manipulation of others.

Machiavellian attitudes are not connected to the ideological orientation of their proprietors, nor to their general intelligence. Machiavellism, however, correlates negatively with emotional intelligence (Goleman, 1997). Several studies show that machiavellism correlates positively with psychopathology (Christie, 1970). Machiavellists are rather successful in ambiguous situations with many contradictory pieces of information, in which they work flexibly with several strategies. This applies also to the short-time interactions with a room for improvisation, or for creation of an irrelevant impression. They know how to form purposeful coalitions and they can be good negotiators. However, in the real life they are often not successful and mainly not from the long-time point of view (Kohutiar, 2009).

The issue of possible connection of machiavellism to the other personality features became an interest of several researchers. In many studies, a negative correlation between machiavellism and two dimensions of the five-factor personality structure Big Five, namely agreeableness and conscientiousness, was confirmed (Vernon, Vilani, Vickers, Harris, 2008).

Wilson, Near and Miller (1996) in their analyses proved that unethical tactics of machiavellists lead seldom to success in the real world. One of the strategies of machiavellists is also applying of irrational tactics. Machiavellists are much more convincing deceivers and in their case it is difficult to recognize a lie from the truth. Their lies are aimed at manipulation and self-presentation, which is connected to their narcissism (Vernon, Vilani, Vickers, Harris, 2008).

### **Position of the school headmaster**

Under the term management we understand accomplishing goals through other people (Droppa, 2008). School and its facilities are managed by its headmaster (Várkoly, Sláviková, Lajčín, Tej, 2012). He/she is responsible for the compliance with the curricula, educational schedules, educational standards, further education of the pedagogic and non-pedagogic employees, professional and pedagogical level of vocational and educational work in this school and its facilities. School management represents a specific system of management in which the goal is to reach the vocational and educational goals. According to Miklóssy (2008) it includes:

- Managing the teaching process.
- Managing the material and financial needs.
- Detecting the need of educational services.
- Legal framework of education.
- Personal politics.
- Leadership.

School is a living organism, an institution which demands a systematic, meaningful, permanent and challenging directing and management of all processes which secure and realize its activities. In connection to the school autonomy, the competences in the area of concepts of the content, development of the school



strategy, personal management, financial management, public relations, and primarily the objective evaluation of its quality and effectiveness increase.

Work of the school headmasters requires a complex personality, the activities of which cannot be built only on the basis of the already established stereotypes. In order to make their work in the area of management effective, they must fulfill not only certain qualifications defined by legislation, but they should have also some managerial, organizational abilities and personal qualities, which are preconditions for successful school management of the future.

Miklóssy (2008) understand them as an ability to apply time management meaningfully. Headmasters are supposed to organize the school life in a way that it provides them with a room for effective work and also in order to make the work of each teacher and other employee of the school used rationally and meaningfully. The leading school worker should be a pedagogue, able to help teachers and advise them primarily in the issues of education and didactics. It means that he/she should have a high personality level – he/she should be qualified, permanently self-educated, full of knowledge to give to others, methodical, fulfilling requirements on personal moral features, having pedagogical tactfulness or, in other words, humane approach to children, understanding their problems, but at the same time be challenging in the case of pupils' work and in evaluation of their work.

For headmasters to be successful in their function they must be good psychologists with emphatic behavior – ability to understand the position and experiencing of others (school employees, legal guardians of pupils), understand their problems, help them in solving difficulties. In connection to the tasks, headmasters should be responsible, tireless, initiative. Application of consistency puts high demands on their own work as well as on the whole team work. If they want to be challenging to the teachers, they must be challenging to themselves first. Requirements for the work of teachers should be real and attainable. In fulfilling these requirements consistency should be demonstrated. If the headmaster is not consistent, is superficial or benevolent in fulfilling or controlling the fulfillment of the assigned tasks, the school work becomes disorganized and the headmaster's authority decreases (Miklóssy, 2008).

By means of communication, all managing functions of headmasters are carried out, ensuring that the governing body intentions are fulfilled, general mandatory and school regulations observed, pedagogical and organizational directions and internal school norms and directions applied. According to Pasternáková (2008), communication of school headmasters should be:

1. Comprehensible, concrete, characterized by high level of speaking and writing culture.
2. Speaking should be fluent, concise, with exact terminology and schema.
3. During each verbal communication appropriate tone should be used.
4. They should be able to listen to the opinions of others willingly and without interruptions.
5. They should create a feeling of safety and trust for the teachers as well as motivate them to work.

6. They should adhere to the principle of individual and differentiated approach to each teacher and pupil.
7. They should avoid supercilious behavior, threatening, offering unsolicited advice, vagueness of speech, keeping secrets, reproachful words.
8. Their communication should adhere to the principles of assertiveness.
9. They should exactly define their intentions and ways they evaluate a situation, what they think about it and how they experience it.

According to Čáp and Mareš (2001), social intelligence is a common term for the character and all moral aspects of personality of teacher as well as school headmaster, moral aspects of their life and advancement. Advancement and forming of these pedagogic personality aspects are developing as complicated processes of socialization, interaction with environment and internal changes and autoregulation. An individual needs to gain experience in the area of communication and interaction among persons who are relatively close to him/her (social status, advancement of intellect etc.). It is necessary to become acquainted with them, meet them, solve conflicts, and all of it in the name of cooperation and team sustainability without which he/she cannot satisfy the important needs. In development of personality, even favorable personal relations models are important.

Social intelligence is a significant factor of determination of human behavior primarily in social situations. For its definition at the theoretical as well as methodological level we may specify several concepts and approaches. From the point of view of the presented research, social intelligence was investigated as a multidimensional, performance personality trait charged neutrally from the viewpoint of ethical context.

## **Methodology**

The respondents of the presented research were the headmasters of primary and secondary schools from Prešov and Košice (Slovakia). The research file consisted of 81 respondents (20 men and 61 women), aged from 27 to 68 years, with average age of 49.7 years. The school headmasters received during education of managers at MPC in Prešov via their lecturers a testing battery, which they were to fill out in 10 days. The testing battery contained these methodologies: social intelligence – TSIS scale, and machiavellism – MACH IV. The results were processed in the statistical program SPSS 18, and for calculations Spearman's correlation coefficient was used. In the research the following methodologies were used:

**TSIS (The Tromso Social Intelligence Scale)** – scale for measuring social intelligence (Silvera, Martinussen and Dahl, 2001). By means of the TSIS questionnaire it is possible to specify three subscales of social intelligence as a performance trait, whereas each of the subscales creates 7 items of the questionnaire, therefore there is a total of 21 items:

- 1st subscale: Social information processing – SP (I can predict behavior of other people),
- 2nd subscale: Social skills – SS (I get around in social situations easily),
- 3rd subscale: Social awareness – SA (People are frequently surprised by what they do themselves).

Authors introduce Cronbach's alpha values for particular subscales as follows: SP – 0.79; SS – 0.85; SA – 0.72 (Silvera, Martinussen, Dahl, 2001). The items are evaluated on a 7-point scale, where 1 means “it represents me very weakly” and 7 means “it represents me very well”. In the research conducted in Slovakia (Baumgartner, Vasilová, 2005), the Cronbach's alpha values for individual subscales were SP – 0.82, SS – 0.74, SA – 0.74 and for whole scale the Cronbach's alpha = 0.84. In our research, for particular subscales the following Cronbach's alpha values were calculated: SP – 0.77, SS – 0.75 and SA – 0.69.

The presented findings prove the satisfying level of internal consistency of the individual subscales of the TSIS methodology in the conditions of development of this methodology as well as in relation to the Slovak respondents. The data were processed by means of the statistical program SPSS 18 with the use of univariate analysis of variance.

**Mach IV – machiavellism** (Hunter, Boster, Gerbing, 1982). The test includes 20 statements related to the personal opinions of respondents on relationships, situations, strategies and values among people. The answers are on Likert scale from „1 – absolutely disagree“ to „5 – absolutely agree“. Persons, who receive in the test 61-100 points, are defined as „High Mach“. Up to 59 points inclusively, they are defined as „Low Mach“ and the score of 60 points identifies persons with an average score in machiavellism. In the Mach IV methodology four components of central dimensions of machiavellism were defined: blandishments; deceit and lie; immoral behavior and cynicism (Hunter, Boster, Gerbing, 1982).

## Results

Analysis of the gained data was aimed at identification of interconnections among the components of social intelligence measured by the TSIS questionnaire and the selected manifestations of machiavellism in the behavior of headmasters measured by the MACH IV questionnaire. Table 1 illustrates the aforementioned correlations between the components of social intelligence and manifestations of machiavellism in the behavior of headmasters.

Table 1 Correlations between the social intelligence components (TSIS) and machiavellism (MACH IV).

	SP	SS	SA
<b>Blandishments</b>	.419**	-.253*	-.616**
<b>Lie and deceit</b>		.330**	.249*
<b>Immorality</b>	-.417**		-.536**
<b>Cynicism</b>	.448*	-.288*	-.516**

\*\*  $p < 0.01$ , \*  $p < 0.05$ ,

SP – social information processing, SS – social skills, SA – social awareness

Results of the presented research confirmed the existence of several statistically significant correlations between the social intelligence factors and machiavellian manifestation in the behavior of headmasters.

Social information processing correlated positively with blandishments and cynicism and negatively with immoral behavior. It means that the higher the level of social information processing by headmasters, the higher the level of blandishments and cynicism. Contrarily, with an increasing level of social information processing, the occurrence of manifestations of immorality was decreasing.

Social skills correlated positively with lie and deceit and negatively with blandishments and cynicism. The presented correlation coefficients prove that the higher level of headmasters' social skills corresponds with the higher level of manifestations of lie and deceit in their behavior. On the contrary, the higher the level of social skills of these managers, the lower the occurrence of manifestations of blandishments and cynicism in their behavior.

Social awareness statistically significantly correlated with all the studied attributes of machiavellian manifestations in behavior. A positive correlation was detected in relation to lie and deceit. Negatively presented characteristic of social intelligence correlated with the manifestations of machiavellism specified as blandishments, immorality and cynicism. It means that the school headmasters who had higher scores in social awareness used in their behavior lie or deceit more frequently. Contrarily, the mentioned higher scores in the case of social awareness is related to the lower occurrence of manifestations of blandishments, cynicism and immorality.

The school headmasters, who have no problems to interact and behave in social situations (with a higher level of social skills) and at the same time are not surprised by the behavior of other people (with a higher level of social awareness), use in more cases lie and deceit in their behavior, which is perhaps because they know how to disguise this way of behavior adequately. For their behavior it is also typical that they do not use blandishments and cynicism, apparently because they do not need to use these forms of behavior for their own success or recruitment of collaborates. Different is an image of headmasters, who know how to process social information in an appropriate way and are able to predict the behavior of other people. They contrarily use more blandishments and cynicism in social situations, apparently according to the appropriateness for a particular situation.

## **Conclusion**

Wilson, Near and Miller (1996) in their analyses of nine different studies found out that there does not exist any link between machiavellism and general intelligence. Their analyses of other studies also revealed that unethical tactics of machiavellists lead rarely to success in the real world. Positive correlations between machiavellism and success depend on the context of a situation.

In the research on interconnection among the factors of social intelligence and factors of machiavellian intelligence, which was conducted by Frankovský and Birknerová (2012), a correlation was detected between the higher level of cynicism,

using lies for own benefits, and the higher level of ability to persuade others and use them for one's own benefit, to know how to manipulate them. Simultaneously the higher level of cynicism correlated with the higher level of social irritability. It is necessary to note that the social intelligence factor of empathy and the machiavellian intelligence factors of blandishments and immorality did not correlate significantly with any factor. In this context the authors pointed out the absence of negative correlation which would be expected if social intelligence was perceived as an ethical category.

Results of the presented research confirmed the significance and meaningfulness of regarding social intelligence as an important personality trait of school headmasters, which significantly participates in influencing the forms of behavior of these managers. These results simultaneously confirm the justification of regarding social intelligence as an individual category as compared to the general intelligence.

Manifestations of cynicism or blandishments are definitely more frequent in the case of headmasters with a higher level of social information processing and less frequent in behavior of headmasters with a higher level of social skills and social awareness. Therefore they are related rather to the cognitive aspects of social intelligence. Contrarily, the manifestations of lie and deceit correlate significantly with the higher level of social skills and social awareness of these managers.

The presented findings at the same time prove our knowledge about social intelligence in the sense that social intelligence is not an ethical category (Birknerová et al., 2009, Kosmitzki, John, 1993, Kaukiainen et al., 1999).

On the basis of the presented results, social intelligence may be regarded as a significant predictor of managerial behavior of school headmasters. The presented findings must be interpreted in the context of other personality qualities of these headmasters as well as in relation to others, such as machiavellian manifestations of their behavior. These are also the issues to be addressed in other possible studies in this area.

## **Summary**

V príspevku venujeme pozornosť sociálnej inteligencii, ktorú považujeme za významnú a dôležitú kompetenciu manažérskej práce riaditeľov škôl. Táto kompetencia súvisí s efektivitou ich práce a zároveň môže byť aj jedným z dôležitých prediktorov pri výbere ľudí na pracovné pozície riaditeľov škôl. V prezentovanom výskume sme sociálnu inteligenciu skúmali v kontexte machiavellizmu, resp. machiavellistických prejavov v správaní týchto manažérov. Výsledky nášho výskumu potvrdili výskyt významných súvislostí medzi atribútmi sociálnej inteligencie a vybranými machiavellistickými prejavmi v správaní riaditeľov škôl. Z hľadiska etického kontextu sme potvrdili predpoklad, že sociálna inteligencia nie etickou kategóriou.

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## **PERCEPTION OF THE REGIONAL SPECIALTIES BY THE SLOVAK POPULATION IN THE TOKAJ WINE REGION\***

### **VNÍMANIE REGIONÁLNYCH ŠPECIALÍT OBYVATEĽMI SLOVENSKEJ STRANY TOKAJSKEJ VÍNNEJ OBLASTI\***

***Abstract:** Regional development is necessary for the progress and growth of a country in the areas which are specific for the region. Specific features form also regional specialties which need to be managed properly to assist tourism of the region. Tokaj region, regarded as exceptional in terms of the universal value of the area and production of wine, belongs to the category of natural and cultural heritage. Points of the regional interest are questions concerning the management of regional specialties in the South Zemplin in the context of wine products and the possible local-patriotism of population. We surveyed the relationship between the local anchoring respondents (local-patriotism) and their opinions on the management of regional specialties with emphasis on Tokaj wine and opinions on the level of promotion and communication. The respondents strongly criticized management of regional specialties and also their promotion. They require a higher level of management of regional specialties within a higher level of promotion and communication. In the Tokaj region they appeal to increasing of professionalism and expertise of the personnel offering regional wines.*

***Key words:** management of regional specialties, Tokaj wine region, Zemplin, development, wine*

***Kľúčové slová:** manažment regionálnych špecialít, Tokajská vínna oblasť, rozvoj, víno*

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**JEL:** R110, C120

#### **Introduction**

Regional development is necessary for the progress and growth of a country in the areas which are specific for the region. Regional specialties create specifications necessary to manage properly to help tourism of the region. The Tokaj area as part of the Zemplin region has a big potential in the field of viniculture and wine. The Tokaj region, regarded as exceptional in terms of the universal value of the area and production of wine, belongs to the category of natural and cultural heritage. It combines the use of natural resources and conditions of the country in provides innovative products. It needs integrated protection and enhancement of this area to preserve the classical technology of wine production and strong attention.

Regions are contingent on economic growth and competitiveness, which is associated with the overall quality of life dependent on the ability of regions to create new knowledge, implant it into social practice and commercially evaluate it in the form of best innovation [4, 2006, 55]. Systematic creative development of the region, usage of the natural, economic, historical, social and human potential of the region contributes to a supply, which makes out of the region an attractive area for residents, for business, but also for visitors and tourism. The products of the area in the strict understanding are mainly products of the region as a result of the productive activities of people. This includes a wide range of tangible and intangible outputs for the needs of the region, as well as consumption in other territories.

Special place in the regional product mix belongs to the group products represented by the regional specialties. These are products typical for the region, whose uniqueness lies in the originality of the territory. These products reflect the peculiarities of the region, materialize the idea and use specific skills of the population. Thematically, they are based on regional traditions which rely on the period experiences, habits, but mostly on the real conditions of the material area base and jobs opportunities and the experiences created by historical development of the region. When analyzing the product policy, as part of the marketing mix, we can in general divide the product mix of regional specialties into several product groups: [9, 2011, 72]

- food - gourmet products,
- utility products
- souvenirs,
- services,
- regional events [3, 2004, 94].

*Gourmet products* represent in the minds of consumers the most frequent regional specialty. Regional specialties, such as ready-made food products, include alcoholic and non-alcoholic beverages. *Utility products* range from its origin to the work skills and activities of the inhabitants of the region in ancient history. These are usually the products of craft made from the materials of the region. *Souvenirs* characterize the region and represent a wide range of products. A special group consists of folk artists of the region. Services are a special offer of each region, but that is a small group of regional specialties such as hiking trails, tasting as part of programme for visitors, regional events. Bírová [3, 2004, 92] formulates ideas for creating products known as regional specialties from the options, respectively the criteria of regional specialties such as:

- the original recipes and production processes,
- historical connection to the region,
- natural conditions of the regions,
- specific features of producers.

Concepts in the production of regional specialties preserve cultural heritage and historical procedures. Individual ideas of Slovak producers who use unrepeatable natural conditions in the region create a presumption for production of products with unmistakable characteristics. Individual natural resources are becoming part of the production procedure, because due to its features they bring taste, smell, etc. This is

also characteristic for the Tokaj wine. Within the concept of regional specialties we encounter the expert community and understanding of gourmet specialties (see e.g. [12, 2014, 1], [17, 2000, 2], [13, 1996, 185-186]) but also other values of cultural heritage (e.g. [18, 2013, 1], [19, 2014, 1], [14, 2011, 324]).

The concept of management of regional specialties, according to Kretter [9, 2011, 72] and Bírová [3, 2004, 94], can be seen in the current period as part of an integrated management approach in the context of tourism. According to these authors, integrated management is an "instrument for the tourism development coordination [and] is ensured by conceptual and strategic development documents in two basic dimensions (national, regional)" [10, 2005, 8].

A new way of how to coordinate and manage tourism in the region is integrated management, which is based on the respect for interests of the local self-governments, local population, businesses, as well as tourists. Integrated management is a strategy of cooperation upon which the development of the Slovak Tokaj region is dependent, including the talent development [5, 2013, 143]. This is also linked to new approaches to business ethics in tourism [2, 2012, 35].

In the Zemplin area, growing of vine has a long history – since the 2nd century a.d.. the name Tokaj comes from the old Slavonic "Stokaj" which means „confluence of the Tisa and Bodrog rivers“. On the slopes around there were vineyards, of which the Hungarian commander Turzo reported back to the prince Arpad in the 3rd century. After the Tatar invasion in 1241, the vineyards were destroyed and villages burned. King Belo IV. called for the Italian colonists, who settled in the depopulated areas of the country, participated in the reconstruction of the economic life and made vineyards. Italians, except for the new technology of wine production, have also brought new grape variety – Furmint. During the area of the king Matthias Corvinus, medieval royal cities purchased quality wines [8, 2001, 20].

## **Material and Methods**

Our concern were the questions concerning the management of regional specialties in the South Zemplin area in the context of wine products. For data collection a questionnaire method was used, based on the snowball selection method. The basic sample consisted of the South Zemplín residents, which was a set of 119 adult respondents, with 84.4% of returned questionnaires; the selection method – snowball. The number of inhabitants of the region (including children) is 3 831. The basic problem of the survey questions were: What is the opinion of respondents on the level of regional specialties management and what is their local-patriotism relationship to them, especially the wine in the Tokaj region. The respondents answered to the closed questions in a four-step scale, the open questions were not limited. Basic features of the sample were mostly elements of local anchors in the southern Zemplín (place of birth and residence). The survey was conducted in the Tokaj region in the summer holiday period of 2013.

The following statistical methods were used: exploratory data analysis (EDA) and multiple correlation analysis. To verify the research problems and variational analysis, a typical t-test of two independent selections and Mann-Whitney nonparametric and exact binomial test were used.

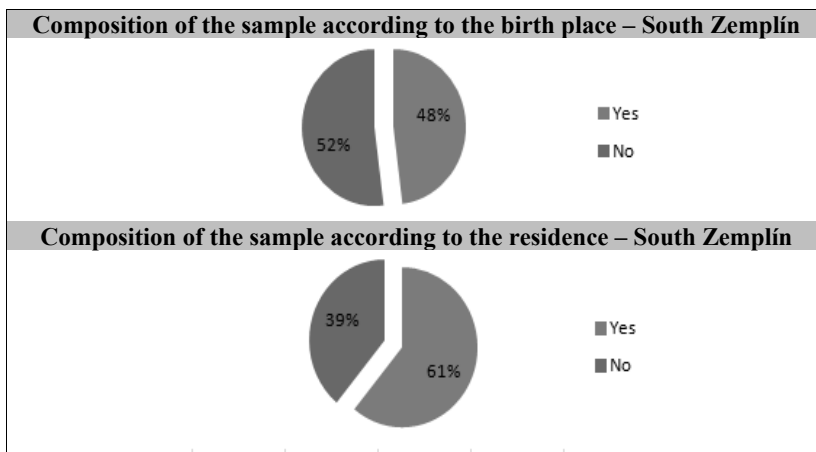
## Results and Discussion

The Tokaj area, where wine is produced, is an important recreational destination of tourism in Slovakia. Tourism and wine trade contribute significantly to the economic potential of the region. The region has created the conditions for recreation especially near water. Recreation centers have built a comprehensive and functional infrastructure. Developed agrotourism and rural tourism is linked to the local cultural, historical and natural attractions, traditional crafts, local food specialties and unlimited access to packages of services and products.

As an example we can use the winery in the village Malá Trňa with its achievements. Winery of Macik family – Tokaj Macik Winery, Ltd. – is a young progressive family-owned company that continues the family tradition in the production of Slovak Tokaj wine, which has a rich tradition of winemaking in the region. It was established in 2000. Today, two generations of winemakers interact in the center of Slovak Tokaj, where directly in the winery they provide above-standard services to its customers. Annually, they produce more than 200,000 bottles of wine. Outside the pension, the family successfully deals also with gastronomic specialties and their connection with the wines. They serve Zemplín specialties to its guests in the wine house right after degustation. A full range of Tokaj wine varieties, a new luxury hotel, a restaurant with two traditional rooms and a medieval tufa cellar designed not only for wine tasting and tours, as well as their private archives are all attractions for the domestic and foreign tourists. Producers who deal with Tokaj wines in the Zemplín region are J & J Ostrožovič, VÍNO VDOVJAK – Ing. Jozef Vdovjak a Zlatý stravec, Galafruit & CO, Ltd., Chateau Viničky, SANPO Ltd., Tokaj & CO, Ltd., Tokajská spoločnosť. The youngest of these wine producers in the region is Tokaj Macik Winery, Ltd.

A statistical analysis revealed the key importance of communication of regional management in terms of regional specialties, including wine, with the inhabitants. We are aware of some distortions caused by using "soft" data, as in the examination of topics the "hard" data were not available. To understand the thinking of the respondents, it is necessary to know their characteristics (Figure 1).

Figure 1 Characteristics of the survey sample



Source: own elaboration

The level of management in the field of development and support of regional specialties was solved on the basis of the respondents' residence. Differences in the group variable T5 were tested by a t-test and the nonparametric alternative – Mann-Whitney test. We assumed a convergence of the respondents' opinions on the significance level  $\alpha = 0.05$ . The results of the first research problem are shown in Table 1.

Table 1 First research problem results – Level of management and support of regional specialties

Variables		t-test		Mann-Whitney test		
Level of management of regional specialties	born	t value	p value	U value	p. asympt.	p. exakt
	in region	-2.287	0.024	1184	0.021	0.020
	out of region					

Source: own elaboration

Parametric and non-parametric values of the test are below the level of significance  $\alpha = 0.05$  test. We compared the averages and average orders of the non-parametric test, they were significantly different. We can say that the respondents' opinions according to their residence on the level of regional specialties management differs from the one according to their place of birth. Identical results were achieved also in evaluation of the respondents' residence. Similarly we evaluated the respondents' opinions on the regional specialties promotion (Table 2).

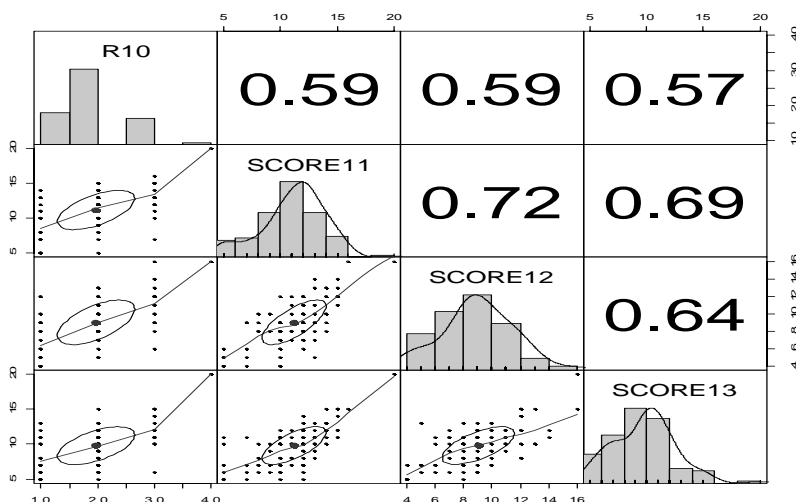
Table 2 Second research problem results – Level of regional specialties promotion

Variables		t-test		Mann-Whitney test		
Level of regional specialties promotion	born	t value	p value	U value	p.asympt.	p.exakt
	in region	-2.571	0.011	1281,5	0.013	0.014
	out of region					

Source: own elaboration

Parametric and non-parametric values of the test are below the level of significance  $\alpha = 0.05$  test. We compared the averages and average orders of the non-parametric test, they were significantly different. This again shows that the respondents' opinions on the level of promotion vary by place of birth. In the next procedure we used the multiple correlation analysis (Figure 2)

Figure 2 Mutual relations amongst management of regional specialties, level of promotion management and level of communication between managers and inhabitants



Source: own elaboration

It is a multiple correlation with statistically significant correlation coefficients ranging from 0.59 to 0.72 which represent a significant correlation. We can say that communication of managers with inhabitants is crucial because of the way the respondents evaluate management of regional specialties and level of their promotion. Multiple correlations indicate that management of promotion has also a high correlation with the management of regional specialties. For a particular management practice in the region, this suggests that the effectiveness of communication and promotion can also be increased by creating synergies.

The previous results can be extended to the respondents' opinions on evaluation of regional specialties support from the viewpoint of self-governing management of the Tokaj region. The results in Table 3 indicate a negative level of opinions of respondents in all groups of regional specialties (58.8% - 79.3%), only the level of regional events gained a positive assessment (57.6%).

Table 3 Level of management and support of regional specialties

	<b>Very weak</b> (n)	<b>Weak</b> (n)	<b>Sum of weak</b> (%)	<b>Good</b> (n)	<b>Very good</b> (n)	<b>Sum of good</b> (%)
<b>Gourmet products</b>	17	53	<b>58.8</b>	45	4	<b>41.2</b>
<b>Utility products</b>	22	63	<b>72.0</b>	32	1	<b>28.0</b>
<b>Souvenirs</b>	31	61	<b>79.3</b>	22	2	<b>20.7</b>
<b>Services</b>	17	57	<b>63.2</b>	39	4	<b>36.8</b>
<b>Regional events</b>	11	39	<b>42.4</b>	56	12	<b>57.6</b>

Source: own elaboration

The respondents evaluated the level of promotions management as weak or very weak. As weakest they evaluated promotion focused on foreign tourists, where promotional materials in a foreign language, signs and navigation in a foreign language and overall promotion of the region specifically aimed at foreign tourists are completely missing. They see a solution to this situation mostly in better utilization of human potential and in the need for better and more competent managers. It is also necessary to improve the promotion of the region using electronic media and social networking. It would as well help to involve young people and secure an inflow of money into the region.

Since the most famous regional products and the major regional specialty is Tokaj wine, we present the opinions of the respondents to its promotion (Table 4).

Table 4 Level of promoting wines from the Tokaj region

	<b>Very weak</b> (n)	<b>Weak</b> (n)	<b>Sum of weak</b> (%)	<b>Good</b> (n)	<b>Very good</b> (n)	<b>Sum of good</b> (%)
<b>Originality of bottles</b>	5	14	<b>16.0</b>	64	36	<b>84.0</b>
<b>Packaging, design</b>	4	15	<b>16.0</b>	67	33	<b>84.0</b>
<b>Sufficiency of local wines varieties offer according to the customer's solvency</b>	3	26	<b>24.8</b>	55	33	<b>75.2</b>
<b>Diversity of local wines offer</b>	5	16	<b>17.9</b>	61	35	<b>82.1</b>
<b>Whether restaurant facilities offer enough local wines</b>	9	58	<b>56.8</b>	44	7	<b>43.2</b>

Source: own elaboration

The respondents regarded originality of the wine bottles, packaging and design as the best type of promotion. 84% of the respondents evaluated it as good or very good. 75.2% of the respondents considered also the level of price offer variability to be good and 82.1% of the respondents evaluate positively the variety of wines. The level of local wines offer in the restaurant facilities was rated by 56.8% of the respondents as poor. When shopping for the local wine, the respondents take into consideration the criteria mentioned in Table 5.

Table 5 Criteria taken into consideration when buying wine

	<b>Yes (n)</b>	<b>No (n)</b>	<b>P value</b>	<b>Statistical significance</b>
<b>Brand</b>	98	20	0.830	yes
<b>Taste</b>	116	3	0.983	yes
<b>Price</b>	82	35	0.700	yes
<b>Recommendations of friends</b>	80	37	0.683	yes
<b>Recommendation of a sommelier</b>	71	45	0.612	yes
<b>Recommendation in restaurants</b>	51	65	0.560	no

Source: own elaboration

On the basis of an exact binomial test, where we compared frequencies of the answers „yes“ against „no“, we can say that the respondents prefer selection of wine by brand, taste, price, friends' advice and recommendations of a sommelier. They do not prefer mere recommendations from restaurants. We tested the proportions of 0.5 and the significance level  $\alpha = 0.05$  in the test. This findings correspond also with the findings from the open questions about improving the visibility of the Tokaj wine – increased professionalism and erudition of staff offering the regional wines. The respondents consider wines from the Tokaj region to be legitimate for the regional specialty, and they rate them as of more quality in comparison to the wines from other regions. In order to exploit the potential of the Tokaj wine it is still necessary to improve the promotion. Tastings would help as well as offering regional wines at special events, developing the Tokaj wine roads and building similar thematic tourism products. However, it is definitely necessary to improve the services and knowledge of the restaurant facilities personnel in the sommelier area, which are rated as unsatisfactory.

## Conclusion

Poor communication makes a poor assessment of the respondents in almost all areas assessed. The level of self-government communication in the Tokaj region with the inhabitants regarding the management of regional specialties is according to the respondents weak or very weak. Such a low level of communication is reflected in the weak evaluation of the level of support for regional products, culture, services, levels of promotion and the Tokaj wine. The level of regional products support from



the viewpoint of regional management is also rated as poor. Only support for the traditional folklore development was evaluated as good by more than a half of the respondents.

The Tokaj wine is a historically created brand that is well known within the region, in the whole country as well as in Europe. Nevertheless, in connection with the area, a strict regional approach is necessary from management to attract tourism participants to the region, who would consume the wine products and attend many attractions in the form of festivals, hiking trails, bike routes and a peaceful natural, rural environment.

## **Summary**

Regional development is necessary for the progress and growth of the country in the areas specific for the region. Specific features consist of regional specialties which need to be managed properly to assist tourism of the region. The Tokaj region is regarded as exceptional in terms of the universal value of the area, and production of wine belongs to the category of natural and cultural heritage. Points of the regional interest are questions concerning management of regional specialties in the South Zemplin in the context of wine products and the possible local-patriotism of population, therefore the perception of inhabitants as well as the natives was also closely studied. The survey results confirmed a significant critical opinion of population on the management of regional specialties and their promotion. The respondents consider communication from the side of management, propagation of products including the Tokaj wine, but also services and knowledge of personnel in the restaurant facilities in the sommelier area as very weak. The Tokaj wine is a historically created brand that is well known in the region, the whole country as well as Europe. It is necessary to activate self-governing managements in the Tokaj region to intensify activities related to the promotion and communication in tourism on a local, national and international scale.

## **Súhrn**

Pre vývoj a rast krajiny je potrebný rozvoj regiónov v oblastiach, ktoré sú pre neho špecifické. Špecifikum tvoria aj regionálne špeciality, ktoré je potrebné správne manažovať, aby napomáhali cestovnému ruchu regiónu. Tokajská oblasť je považovaná za výnimočnú z pohľadu univerzálnej hodnoty územia a výroba vína a patrí do kategórie prírodného a kultúrneho dedičstva. Predmetom záujmu sú otázky týkajúce sa manažmentu regionálnych špecialít v oblasti južného Zemplína v kontexte vínnych produktov a možný lokalpatriotizmus obyvateľov, preto bolo vnímanie skúmané tak u obyvateľov ako aj u rodákov. Výsledky prieskumu potvrdili výrazný kritický názor obyvateľov na manažment regionálnych špecialít a ich propagáciu. Za veľmi slabú považujú komunikáciu zo strany manažmentu, propagáciu produktov vrátane Tokajského vína, ale aj služby a znalosti obsluhujúceho personálu v reštauračných zariadeniach v oblasti someliérstva. Tokajské víno je historicky vytvorenou značkou, ktorá je v regióne, krajine i v Európe dostatočne známa. Je potrebné aktivizovať samosprávné manažmenty

v Tokajskej oblasti aby zintenzívnili činnosti spojené s propagáciou a komunikáciou v turizme lokálnom, národnom i medzinárodnom meradle.

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**DETERMINATION OF COST OF EQUITY FOR SELECTED ENTERPRISES OF THE ENERGY INDUSTRY APPLYING THE CAPM MODEL AND ITS COMPARISON WITH THE MODEL WITH GRADUAL COUNTING RISK PREMIUM\***

**STANOVENIE CENY ZA VLASTNÝ KAPITÁL MODELOM CAPM PRE VYBRANÉ PODNIKY ENERGETICKÉHO PRIEMYSLU A JEHO KOMPARÁCIA SO STAVEBNICOVÝM MODELOM\***

***Abstract:** This contribution is devoted to the issue of calculating Economic Value Added, as one of the most important business performance evaluation indicators. It elaborates and analyses business value calculation inputs as well as inputs for calculating Cost of Equity. The mentioned issue was solved mainly by application of Capital Asset Pricing Model and Model with Gradual Counting Risk Premium. The analysis of the research sample revealed that the calculated Cost of Equity is the highest when applying CAPM model and  $r_f$  Slovak government bonds. Therefore for this Cost of Equity we have achieved the worst values of the EVA indicator. Applying the Model with Gradual Counting Risk Premium we obtained an unstable and fluctuating development of Cost of Equity and consequently the values of the EVA indicator. We concluded that the most appropriate model to quantify the Cost of Equity is the CAPM model with the application of  $r_f$  US 10 – year treasury bonds. The most difficult issue in this model was the determination of risk premiums. Risk premium of several authors, who are devoted to this issue, do not correspond with achieved possibilities in Slovakia. Conclusion of this paper consists of recommendations for modification and application of an appropriate model for calculating the Cost of Equity.*

***Key words:** Cost of Equity, Capital Asset Pricing Model, risk premium, Economic Value Added*

***Kľúčové slová:** Náklady vlastného kapitálu, Model oceňovania kapitálových aktív, rizikové prémie, ekonomická pridaná hodnota*

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**JEL:** C51, C53

## **Theoretical basis of Cost of Equity determination in calculating the EVA indicator**

EVA indicator is widely used in today's business practice to determine the value of the company as well as for the evaluation of enterprise performance. To calculate this indicator, it is necessary to determine Cost of Equity. For this purpose several methods are used, while the Slovak businesses especially apply Model with Gradual Counting Risk Premium. This calculation is focused on evaluation of corporate governance risk premium and does not take into account systematic risks that evaluate risk of economic development and macroeconomic variables. Therefore it is necessary to supplement risks accepted by Model with Gradual Counting Risk Premium by systematic risks. In this case the CAPM model in its modification for calculating Cost of Equity seems to be a good solution.

In current practice of financial management in the Slovak Republic the determination of Cost of Equity was not so common. The use of Equity for financing business needs is not for free. Cost of Equity estimation expresses expected owner's rate of return with respect to the degree of risk associated with this investment. It is extensive issue, which encompasses a number of implications.

To determine the Cost of Equity several methods can be used:

- **Dividend Discount Model** based on the assumption that the price of Equity invested as the shares are dividends, which are the required rate of return of investors – this model can be used when dividends are paid,
- **Capital Asset Pricing Model (CAPM)** – this model identifies Cost of Equity with rate of return of business Equity investments and is based on the behaviour of the investors in the market - we will mention this model below,
- **Model with Gradual Counting Risk Premium**, which we can apply in our market conditions, risk-free rate of return is raised by the risk premium - usually as the sum of individual risks,
- **Model with Gradual Counting Risk Premium of Garnett and Hill,**
- **Complex model with Gradual Counting Risk Premium of Mařík and Maříková,**
- **Cost budgeting based on risk analysis**, this calculation takes into account specific business risks such as the risk of incorrect business management,
- **Cost budgeting based on average profitability**, where Cost of Equity is identified with return on Equity – in the Slovak Republic this approach is significantly influenced by tax policy,
- **Derivation from the cost of Debt**, costs are derived from the price of Debt, the price of Debt is raised by the risk associated with longer binding of Equity and higher risk of the owner,
- **Cost determination based on the average profitability of the industry.**

## **The Capital Asset Pricing Model (CAPM) and its historical background**

Procedure for determining Cost of Equity based on the CAPM model is the most appropriate from all above mentioned methods. However in our business practice is

hardly applicable due to the unavailability of the data entering the model. In addition this model does not accept unsystematic risk which is also known as idiosyncratic risk or diversifiable risk.

When calculating the Cost of Equity, this model is not used in its original format as it was processed by J.Treynor (1961, 1962), W.Sharpe (1964) and J.Lintner (1965). These authors published articles about the CAPM model, which were processed in articles and publications of H. Markowitz who dealt with the portfolio theory and risk diversification. W. Sharpe, H. Markowitz and M. Miller shared the Nobel Prize for the application of CAPM model.

CAPM method is based on so-called security market line (SML), which derives the median security return from expected risk-free rate of return and the average risk premium on capital market.

The CAPM is a model for pricing an individual security or portfolio. For individual securities, we use the security market line (SML) and its relation to expected return and systematic risk (beta) to show how the market prices individual securities in relation to their security risk class. The SML enables us to calculate the reward-to-risk ratio for any security in relation to that of the overall market

The expected return on the capital asset can be written as:

$$E(r_i) = r_f + \beta * [E(r_m) - r_f] \quad [1]$$

where

■  $r_f$  - risk-free rate of return, return on treasury bills

■  $\beta$  - beta coefficient – risk rate or volatility of stocks in the market. It measures systematic risk of the asset, while  $\beta = 5$  means that given asset is 5-times more risky than market average.  $\beta$  is defined as the covariance between return on the asset  $i$  ( $r_{i1} - r_{m1}$ ) ( $r_{i2} - r_{m2}$ ) and return on market portfolio and is divided by variance of the return on market portfolio. Variance is expected value of the square of the deviation from the expected return  $(r_m - r_{mt})^2$ .

Beta coefficient can be also calculated as volatility of stock price multiplied by their correlation or the degree of common movement with the market. Calculation of this coefficient is based on the volatility of the stock and the market and correlation between them. While the volatility means exchange rate variability, correlation is a measure of common movement with the market. Low correlation may significantly affect the high volatility and transform high-risk stocks to low-risk ones. This causes that the owner takes a lower price per share, while the risk is high.

$$\beta = K_{im} * S_i / S_m \quad [2]$$

$K_{im}$  – **correlation coefficient** between return on security „i“ and return on market portfolio „m“,  
 $S_i$  – **risk of asset** „i“, expressed by standard deviation,  
 $S_m$  – **risk of market portfolio** „m“, expressed by standard deviation.

- $E(r_m)$  – **expected market return** - the mean expected return on the securities market (for example mean average of market index DJIA).,
- $[E(r_m) - r_f]$  – **Equity premium** indicates how much is the expected return on stocks in the market higher than the return on risk-free investment.

### Applying CAPM in calculating the Cost of Equity

In the Anglo-Saxon countries the CAPM model represents most frequently used model for calculating the Cost of Equity. In this paper, the modified CAPM model, used to calculate the Cost of Equity in the Czech Republic and the Slovak Republic, is applied. The most common method of its calculation states Mařík (2003). This modification arose from the need to adapt CAPM model for the businesses valuation in these countries due to the incompleteness of the CAPM model. This model does not take into account risk level of the business in relation to its size due to possible restrictions of securities negotiability, to the risk resulting from uncertain future of the business and due to other specific risks.

$$E(r_i) = r_f + \beta^*[E(r_m) - r_f] + R_1 + R_2 + R_3 + R_4 + R_5 \quad [3]$$

- $R_1$  - premium for country risk
- $R_2$  - premium for market capitalization
- $R_3$  - premium for limited liquidity
- $R_4$  - premium for companies with uncertain future
- $R_5$  - premium for specific risks

To calculate Cost of Equity we apply shortened version of modified CAPM model Mařík (2003), Damodaran (2014).

$$r_e = r_f + \beta_L * ERP + CRP \quad [4]$$

- $r_e$  - Cost of Equity,
- $r_f$  - risk- free rate of return, US 10-year treasury bonds; in the case of the Slovak republic, alternatively, we can use Slovak government bonds ([www.nbs.sk](http://www.nbs.sk)),
- $\beta_U$  - unlevered beta; investment or sector-specific risk for correlation to the market,
- $\beta_L$  - levered beta; unlevered beta adjusted to levered beta with the use of Debt of particular business, for which coefficient beta is computed. When we calculate  $\beta$  for businesses, the shares of which are not traded on the stock market, we use an analogy with similar business.

$$\beta_L = \beta_U * (1 + (1-t)*(d/e)) \quad [5]$$

Equity beta (levered beta) = unlevered beta (1 + (1 - t) (Debt/EquityRatio))

d - Debt  
e - Equity  
t - Tax

**ERP - Equity risk premium** (in the Slovak Republic used as RPT) is the return on market portfolio with respect to its risk, compared with expected return and risk of risk-free tangible assets, i.e. government bonds. It regards the difference in return on the market portfolio, i.e. shares on the capital market and average return on government bonds.

**CRP - Country risk premium** (in the Slovak Republic used as RPZ) given by the product of Equity volatility and rating-based default spread. Subsequently the risk premium is adjusted for country inflation.

### **The Model with Gradual Counting Risk Premium**

When calculating the Cost of Equity the Model with Gradual Counting Risk Premium can also be applied. This model is currently the most commonly applied model for determining Cost of Equity in the Slovak Republic ([www.dominanta.sk](http://www.dominanta.sk)).

This approach is applied in case of inefficient capital market and representative composition of the index, while the change in the index reflects changes in fundamental factors.

Among the fundamental factors influencing the level of risk belong (applicable in our conditions):

- Return on Assets (ROA) which puts Earnings before interest and taxes (EBIT) produced by the enterprise in proportion to business total capital or total assets. This indicator states value of the output, which is the business capable to produce, regardless of who will receive this output. The higher ROA is, the lower is the risk. Probability that the business deals with operational leverage is greater.
- Business size, measured by the amount of Equity, is also risk indicator. The higher the business Equity is, the greater is its power of negotiation. Small businesses ownership is associated with greater risk. When selling a small business, seller usually has to wait for a long time for an acceptable offer.
- Indebtedness, expressed as the ratio of Equity to gross capital, plays an equally important role. The lower the share of foreign capital is, the greater is the probability that business pays fixed costs associated with capital and the higher amount remains to business owners. The lower the share of foreign capital is, the lower is the risk premium resulting from capital structure.
- The last fundamental factor is Current Ratio, which expresses the ability to pay business short-term obligations through the financial assets and receivables. This indicator evaluates the financial risk of the company.



Based on the values of these indicators, the risk premium, which is added to risk-free rate of return, is calculated.

Knowledge of profitability, which corresponds to risk, enables to recalculate the amount of profit, which the owner lost because he did not invest in alternative equally risky investment. It represents the Cost of Equity. As far business net profit is lower than Cost of Equity, the entrepreneur did not achieve for his capital as much as he could earn elsewhere with the same risk. If business produces higher profit than Cost of Equity, it generates economic profit – EVA.

Cost of Equity is given as the sum of risk-free asset and risk premium.

$$nvk = r_f + PR \quad [6]$$

$r_f$  - risk-free rate of return (of government bonds, respectively short-term government bonds),

$PR$  - risk premium.

Based on empirical research on „Three Factor Model“ (Fama, French, 1992) the risk premium is defined as follows:

$$PR = r_{la} + r_p \quad [7]$$

$r_{la}$  - risk premium for lower liquidity of the stocks in the market. Its value is influenced mainly by the possibility of trading shares on the market, business size and the size of owner's Equity share,

$r_p$  - risk premium for business future, its value is designated by factors determining the perspectiveness of the enterprise.

The expression of the risk premium may be inspired by an assessment of rating agencies. But it is necessary to take into account the fact that rating agencies evaluate the risk with respect to creditors, it means whether a business is able to fulfil obligations towards its creditors. Results and procedures of rating agencies will help us in determining the Cost of Equity. Rating appreciates the risks of company business plan. These are exactly the same risks that are taken into account by owners (business and financial risk). The view of the owner and creditor differs; the creditor prefers lower risk because his reward is fixed while the owner optimizes the relationship risk – return. They differ in the forecast period, because creditors are interested in time horizon, during which the loan is paid. Nevertheless it is possible to use procedure of rating agencies to construct Cost of Equity.

$$r_e = r_f + r_{LA} + r_{business} + r_{financia} \quad [8]$$

$r_f$  - risk-free rate of return,  
 $r_{LA}$  - risk premium for lower stocks liquidity in the market,  
 $r_{business}$  - risk premium for business risk,  
 $r_{financial}$  - risk premium for financial risk.

The first two risks reflect the external evaluation, it regards namely risk premium for lower stocks liquidity in the market and the second one is related to the situation on the stock market – specific risk premium for stocks. The other two risk premiums represent the risks from the perspective of owners.

### **The aim and the methods used**

The aim of this contribution is to elaborate the application of CAPM model to calculate Cost of Equity for Slovak businesses under the Slovak condition and comparison of its results with the results of Model with Gradual Counting Risk Premium. At the same time the aim is to point out the fact that when valuing Equity should be taken into account besides the non-systematic risks also systematic ones. Input data for the calculation of EVA indicator are obtained from the selected companies running a business within the energy industry. To calculate the Cost of Equity, the database of A. Damodaran (2014) is used.

In accordance with the stated objective and mentioned methods of solution, the following scientific hypotheses are set up.

H1: We suppose that applying CAPM model results in deterioration of value of the EVA indicator due to incorporation of systematic risks to the calculation of Cost of Equity.

H2: We suppose that applying CAPM model does not result in deterioration of value of the EVA indicator due to incorporation of systematic risks to the calculation of Cost of Equity.

### **Results and discussion**

Hypothesis is verified by the calculation of Cost of Equity applying CAPM model and Model with Gradual Counting Risk Premium. Calculation with the use of CAPM model is challenging due to lack and unavailability of input data. It is necessary to highlight the work of A. Damodaran, who created an extensive database of input data for  $r_e$  calculation. Based on his recommendations we can use US 10-year treasury bonds as business risk-free rate of return in the calculation of  $r_e$ . This data can be replaced by the data provided by Národná banka Slovenska, on website of which the database of long-term interest rates is located. However, as recommended by many authors, it is more appropriate to use US treasury bonds, in order not to incorporate the market risk into  $r_e$  calculation twice. When comparing these data, we can conclude that the return on US 10-year treasury bonds is significantly lower compared to the Slovak government bonds. Applying US 10-year treasury bonds we obtain Cost of Equity at least 2% lower, what increases the

value of the EVA indicator. In addition to risk-free rate of return- $r_f$  enters the calculation of Cost of Equity also coefficient  $\beta$ , which expresses the contribution of systematic risk. Its value can be determined from Damodaran online databases, namely for Europe and for energy industry. We adjusted this coefficient for the Debt of selected businesses of the energy industry. We proceeded similarly in identifying and calculating the additional risk premiums entering the CAPM model – country risk premium and implied Equity risk premium USA – ERP. We consider implied Equity risk premium for the U.S. market again, which we subsequently adjust for country risk premium.

Table 1 Calculation of Cost of Equity and EVA indicator applying CAPM model

Indicators	2008	2009	2010	2011	2012
$r_{f\_US}$ 10 – year treasury bonds (%)	2.92	3.24	2.80	2.07	1.62
$r_{f\_Slovak}$ government bonds (%)	4.72	4.12	4.06	5.21	3.92
Unlevered beta(factor)	0.80	1.14	1.23	1.21	1.20
Levered beta(factor)	0.80	1.15	1.28	1.32	1.28
ERP (%)	6.60	4.73	5.08	6.51	6.56
Country risk premium (%)	1.05	2.10	1.35	1.28	1.28
Inflation (%)	4.60	1.60	1.00	3.90	3.60
Country risk premium with inflation (%)	5.65	3.70	2.35	5.18	4.88
$r_{e\_USA}$ (%)	12.73	12.92	12.31	17.45	16.26
EVA <sub>3</sub> USA (thousands EUR)	-36 636.13	-39 386.71	-36 809.55	-53 902.84	-78 232.82
$r_{e\_Slovakia}$	14.53	13.80	13.57	20.59	18.56
EVA <sub>4</sub> Slovakia (thousand EUR)	-47 214.39	-44 550.69	-43 740.85	-71 608.61	-90 349.27

Source: Own processing

In the following table the calculation of the EVA indicator with the use of Model with Gradual Counting Risk Premium is summarized.

Table 2 Calculation of Cost of Equity applying Model with Gradual Counting Risk Premium

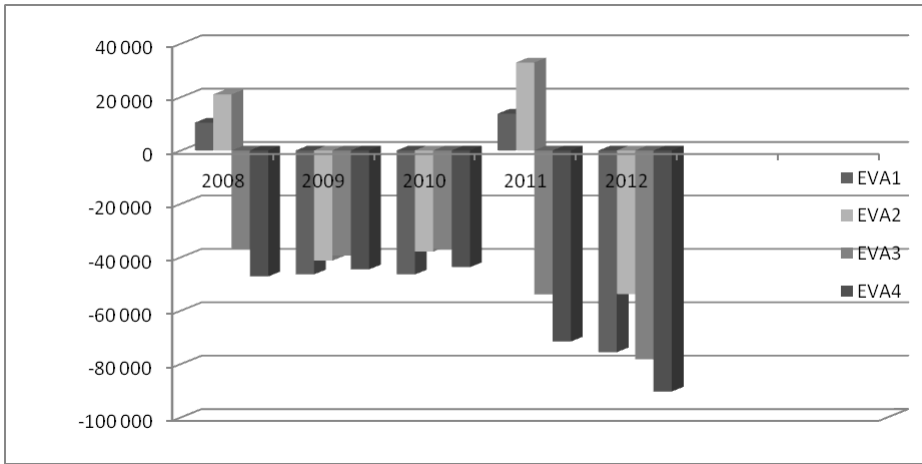
Indicators	2008	2009	2010	2011	2012
ROE (%)	6.49	6.21	5.62	7.89	1.41
ROA(%)	7.09	6.45	5.49	7.71	3.94
P <sub>1</sub> (%)	2.15	0.44	4.17	0.88	0.37
r <sub>ent</sub> (%)	0.00	0.00	0.00	0.00	0.00
TL(ratio)	1.23	0.77	0.74	1.20	0.66
r <sub>fin</sub> (%)	0.00	10.00	10.00	0.00	10.00
PC (thousand EUR)	598 010.00	682 451.00	649 233.00	668 623.00	645 919.00
r <sub>LA</sub> (%)	0.00	0.00	0.00	0.00	0.00
r <sub>f</sub> Slovak government bonds (%)	4.72	4.12	4.06	5.21	3.92
r <sub>el</sub> Slovakia (%)	4.72	14.12	14.06	5.21	13.92
EVA <sub>1</sub> (thousand EUR)	10 423.46	-46 430.56	-46 452.98	13 740.76	-75 610.00
r <sub>f</sub> US 10 – year treasury bonds (%)	2.92	3.24	2.51	2.05	1.62
r <sub>e2</sub> USA(%)	2.92	13.24	12.51	2.05	11.62
EVA <sub>2</sub> (thousand EUR)	21 001.71	-41 266.57	-37 909.89	32 930.50	-53 800.39

Source: Own processing

Figure 1 compares values of the EVA indicator for 5 years, while these values are calculated in different ways. The difference in the calculation is in determining the Cost of Equity. EVA<sub>1</sub> and EVA<sub>2</sub> computation is based on the calculation of Cost of Equity applying Model with Gradual Counting Risk Premium, while the difference in these calculations is in the determination of risk-free rate of return. EVA<sub>1</sub> is calculated with the use of r<sub>f</sub> Slovak government bonds (%) and EVA<sub>2</sub> using r<sub>f</sub> US 10 – year treasury bonds (%). Applying r<sub>f</sub> Slovak government bonds (%) we achieved significant deterioration of EVA indicator values. Applying CAPM model we calculated values of indicators EVA<sub>3</sub> and EVA<sub>4</sub>. The worst result reported the value of EVA<sub>4</sub>, in which the CAPM model and r<sub>f</sub> Slovak government bonds (%) are applied. On the contrary EVA<sub>3</sub> calculation, despite the fact that EVA<sub>3</sub> achieves negative value, seems to be the most appropriate method for calculating the EVA value. To compute EVA<sub>3</sub> CAPM model and r<sub>f</sub> US 10 – year treasury bonds (%) are

applied. The development of the indicator is balanced and its calculation applies market risks including country risk.

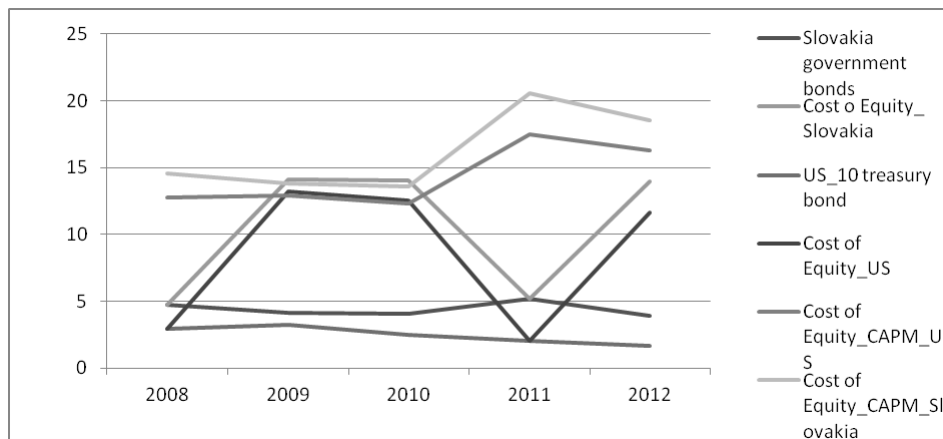
Figure 1 Comparison of the values of EVA indicator



Source: Own processing

Figure 2 compares values of Cost of Equity, while from this figure it is obvious that Cost of Equity calculated applying Model with Gradual Counting Risk Premium are in the year 2014 significantly lower than the price calculated by CAPM model. This reduction is caused by the removal of corporate financial risk that CAPM model does not accept. When the business fails to maintain value of Current Ratio stable, the values of Cost of Equity as well as the values of Current Ratio will appear unstable from year to year and its development will fluctuate from positive values of the EVA indicator to negative ones. In terms of forecasting and supporting business performance, the acceptance of this risk seems problematic. In the contrary, if we look at the development of Cost of Equity calculated by CAPM model, it has more or less stable course. It is interesting that the significant movement occurred again in 2011 when there was an increase in the Debt of analysed companies and an increase in country risk. We can assume that business drew foreign sources and due to them positively influenced liquidity, causing a decrease in financial risk.

Figure 2 The comparison of Cost of Equity and  $r_f$



Source: Own processing

In conclusion we can say that the application of CAPM model worsened results of the EVA indicator, however not in each year. But at the same time we can conclude that values of the EVA indicator are more stable and show more or less steady development.

## Súhrn

Problematika hodnotenia výkonnosti podniku a stanovenia jej hodnoty je v dnešnej dobe vysoko aktuálna. Pri výpočte ukazovateľov hodnotenia výkonnosti je potrebné vziať do úvahy všetky skutočnosti, ktoré do ukazovateľov, resp. modelov vstupujú, aby sme dokázali vypočítať tieto ukazovatele tým najexaktnejším spôsobom kopírujúcim ekonomické a iné podmienky Slovenska. Z výsledkov tohto výskumu je zrejmé, že aplikáciou 4 prístupov k výpočtu ukazovateľa EVA sme dosiahli 4 rôzne výsledky. Na záver je potrebné poukázať na to, že pri výpočte ceny za vlastný kapitál je potrebné skonštruovať model, ktorý bude akceptáciou vonkajších a vnútorných rizík a súčasne, že hodnotenie niektorých rizík nebude zbytočne prekomponované.

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## **THE VIEW ON SELECTED PRACTICES OF TALENT MANAGEMENT IN SLOVAK CONDITIONS: TARGETING TO STRATEGIC LEVEL\***

### **POHĽAD NA VYBRANÉ PRAKTIKY MANAŽMENTU TALENTOV V SLOVENSKÝCH PODMIENKACH: ZACIELENIE NA STRATEGICKÚ ÚROVEŇ\***

***Abstract:** The purpose of this paper is to present the reality of implementation of the talent management processes and practices in Slovak business environment. Questionnaire survey was a tool for obtaining primary data. The survey examines the complex of talent management processes and practices in Slovak businesses such as talents' identification, recruitment, assessment, development and retaining. The paper presents partial results of the survey concerning the alignment of talent management strategy with overall corporate strategy. For data analysis were used descriptive and inferential statistical methods - ANOVA and Student's t-test.*

***Key words:** Talent, talent management, practices, processes, strategy*

***Kľúčové slová:** Talent, manažment talentov, praktiky, procesy, stratégia*

\*The article is part of the solution of the research grant VEGA 1/0513/14 “Research on possibilities to measure and assess the impact of human resource management practices on organizational performance”.

**JEL:** M12, M54

#### **Introduction**

Talent management - strongly related to human capital - is currently very popular concept and important part of Human Resource agenda. A high volume of recent researches and scientific papers dealing with this issue underline the growing interest in talent management within organizations and businesses. In order to succeed and compete in the global scale, organizations must give adequate attention to talents - people who are able to ensure long-term and sustainable prosperity and development. Talent management plays a vital role in precise business execution as well as in keeping organisation progressive and innovative. It uses various strategies, procedures, and practices to select, attract, develop, and retain talented (skilled) people.



## **The concept of talent and talent management**

The definition of the “talent” is not a simple matter – reason for this is the ambiguity, complexity and incompleteness of the definitions (Ali Taha et al. 2013). Organisations define talents in different ways and they are focused on different - organizationally specific attributes that differentiate talents from other employees. CIPD (2007) research confirms that how talent is defined is:

- organisationally specific,
- highly influenced by the type of industry and the nature of its work,
- dynamic, and so likely to change over time according to organisational priorities.

According Michaels, Handfield-Jones and Axelrod - authors of famous book “The war for talent” (2001) - talent in the most general sense is the sum of person's abilities – intrinsic gifts, skills, knowledge, experience, intelligence, judgment, attitude, character, and drive. It also includes a person's ability to learn and grow. “Talent consists of those individuals who can make a difference to organisational performance, either through their immediate contribution or in the longer term by demonstrating the highest levels of potential” (Chartered Institute of Personnel and Development (CIPD), 2007).

With regard to talent management Lewis & Heckman (2006) argue that there is a lack of clarity - regarding the definition, scope and overall goals of talent management - in the literature focused on talent management. Authors distinguish three distinct views/perspectives on talent management:

1. The first perspective is based on definition of talent management as a set of typical human resource practices, functions and activities such as recruiting, selection, development, career and succession management.
2. The second view focuses primarily on the concept of talent pools.
3. The third perspective focuses on talent generically – regardless of organizational boundaries or specific positions (Lewis & Heckman, 2006).

Whelan et al. (2009, referring to Lewis & Heckman, 2006; Becker, Huselid & Beatty, 2009; Boudreau & Ramstad, 2005) point out that there is confusion around the talent management – its conceptual and intellectual boundaries. Authors indicate four key streams of thought/views on what talent management is:

1. First stream of views perceive talent management as part of HR management. Studies in this tradition often limit their focus to particular HR practices (e.g. recruitment, leadership development, succession planning etc.).
2. A second strand of authors emphasises the development of talent pools.
3. The third stream focuses on the management of talented people.
4. Fourth stream emphasizes the identification of key positions which have the potential to differentially impact the competitive advantage of the firm.

In the following section, we summarize some definitions of Talent management:

- Talent management is about getting the “right people in the right jobs doing the right things” (Hunt, 2008, in Nagra, 2011).
- Talent management is the systematic attraction, identification, development, engagement/ retention and deployment of those individuals with high potential who are of particular value to an organisation (CIPD, 2006, in CIPD (Talent Management: Understanding the dimensions), 2007).
- Talent management means “an organization's attempts to recruit, keep, and train the most gifted and highest quality staff members that they can find, afford and hire. Talent management gives business managers an especially important role to play in recruiting, developing, and retaining desirable staff members”  
(<http://www.businessdictionary.com/definition/talent-management.html>).
- Talent management means “facilitating the development and career progress of highly talented and skilled individuals in the organization, using formalized procedures, resources, policies, and processes”. It focuses “on developing employees and leaders for the future of the organization” (Sims & Gay, 2007).
- “Talent management is the capability to create and continuously optimize the talent resources needed to execute a business strategy. This means attracting and developing them, guiding their performance toward optimal productivity in light of strategic goals and finding new sources of value in their performance through innovation and continuous improvement” (Sonnenberg, 2010, p. 2).
- „Talent management may be defined as a comprehensive, integrated approach spanning the whole enterprise and the employees' entire lifecycle“ (Egerová et al., 2013).

Talent management covers wide range of activities, processes and practices, particularly planning, identifying, acquiring and hiring (recruiting), development (training), retaining and rewarding of talented employees. According Green (2011) the top nine processes i.e. processes most likely to be integrated into existing talent management programs are:

- compensation and rewards,
- engagement,
- high-potential employee development,
- individual professional development,
- leadership development,
- learning/training,
- performance management,
- recruitment,
- succession planning.

Stahl et al. (2012) identify six core talent management practices:

- recruitment and selection,
- development and training,
- performance management,
- retention,
- compensation and rewards,
- talent review.

The range of talent management issues is extremely broad. In this article, we targeted attention to field of strategy namely talent management alignment with overall strategy of the organization. This area is really very crucial for talent management implementation and results as evidenced by the findings of the study of Stahl. et al. (2012) who – based on the research looked at 33 multinational corporations – found that successful companies adhere to six key principles:

1. alignment with strategy,
2. internal consistency,
3. cultural embeddedness,
4. management involvement,
5. balance of global and local needs
6. employer branding through differentiation.

Two forms of alignment – horizontal alignment i.e. integration of talent management into the firm's strategy and vertical alignment i.e. alignment of business processes with one another - have been highlighted as key factors for successful talent management (Gakovic & Yardley, 2007; Guthridge et al., 2006; Heinen & O'Neill, 2004; Morgan, 2006; Preziosi, 2008; Ruppe, 2006, in Burbach and Royle, 2010).

### **Talent management strategy**

The formulation of talent management strategy is critical factor to its effective implementation. Talent strategy means formulation of strategic goals and defining talent needs (Sonnenberg, 2010). Organisation needs to start by looking at its strategic plan, identify knowledge and experience areas that will be important to future success and competitiveness, develop competency models for each of these areas, and design learning paths to develop these competencies in increasing degrees (Human Capital Magazine, 2012).

Alignment with strategy is one of the six key principles that successful companies adhere together with internal consistency, cultural embeddedness, management involvement, a balance of global and local needs and employer branding through differentiation, whilst corporate strategy is the natural starting point for thinking about talent management. Important factor is strategic flexibility since organizations must be able to adapt to changing business environment and revamp their talent approach when necessary (Stahl et al., 2012). Lance and Dorothy Berger (2011) argue that talent management strategy makes explicit the investments made in the people who are expected to be mostly helpful in achieving competitive excellence.

Talent management strategy perceives a workforce as a portfolio of human resource assets that are differentiated based on an assessment of each person's actual and potential contribution to success. The talent management strategy of successful and high-performing organizations contains three guidelines: (1) cultivating people who will make the biggest contribution in the present and in the future; (2) retaining key positions backups; (3) allocation of training, education, rewards, assignments, and development based in the actual and potential contribution of people (Berger & Berger, 2011, p. 14-15).

Situation in formulation of talent management strategy in companies all over the world is far from ideal. Manpower's new Workforce Strategy Survey (in ManpowerGroup, 2011) revealed that nearly one quarter of employers across 36 nations concede that their organizations' workforce strategy does not support their business strategy (or don't know if it does). What is more alarming is a fact that among those two subsets of respondents, more than half (53 %) admit that they are not doing anything about it. In too many cases, the emphasis on talent management is tactical and short term when it ought to be strategic and long term. Anyway, "sustained competitive advantage requires not only a smart business strategy but also a workforce that is equipped to execute on that strategy and understands its role in achieving its goals" (ManpowerGroup, 2011, p. 44 - 45).

### **Sample and methods**

The collection of primary data was conducted through questionnaire survey among owners, managers or executives of the companies in the Slovak Republic. The methodology of the survey was based on the methodology created by Dr. William, J. Rothwell (In: Talent Management: Aligning your organization with best practices in strategic and tactical talent management, 2012). The data obtained in the first stage are part of the research conducted within the V4 countries: Visegrad Fund Standard Grant project „*Integrated talent management - challenge and future for organisations in the Visegrad countries*“. In the survey, we investigated the level of agreement/disagreement with statements related to linking of talent management strategy with business goals. Respondents should specify their level of agreement/disagreement on 6 – point rating: 5 – strongly agree; 4 – agree; 3 – neutral (neither agree nor disagree); 2 – disagree; 1 – strongly disagree; 0 – I am not aware of it / is not implemented.

The main aim of the research was to determine the situation of talent management implementation in Slovak organizations. In this paper are presented partial results of the research. When testing hypotheses several methods of descriptive statistics have been used, namely Student's t-test comparing the means of two samples, correlation analysis detecting statistical relationship between two variables and ANOVA analysing the differences between group means and their associated procedures. The criterion used in hypothesis testing (for rejecting the null hypothesis) was the pre-specified significance level of value of 0.05. As a statistically significant are considered results when a p-value is less than a pre-specified significance level – in this case it is possible to reject the null-hypothesis. The statistical software SPSS was used.

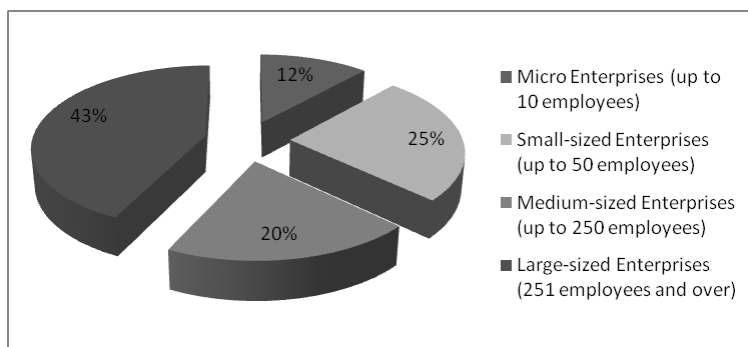
The main outcome of this study is insight into the current state of the talent management processes and practices in Slovak organizations. The next section will present partial results of the research. Attention is given strategy i.e. consistency and coherence of principles and practices of talent management with overall business strategy. The study helps us to gain insight into declaration of talent management strategy in Slovak organizations:

- in terms of the type of organization i.e. its equity participation (domestic/foreign),
- in terms of the size of organization.

### ***Sample characteristics***

The research sample consists of 119 organizations operating in the Slovak Republic. The respondents were approached by electronic and written questionnaires. Respondents from all regions of the Slovak Republic were included in the research. Detailed breakdown of the participating organizations in terms of size, scope of activity and foreign equity participation can be seen in the Figures 1 and 2.

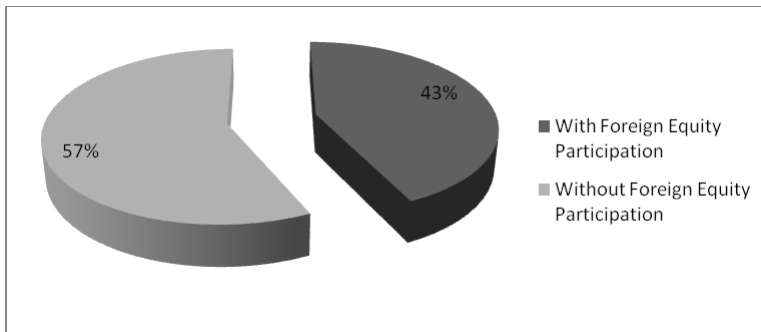
Figure 1 Research sample characteristic in terms of size (number of employees)



Source: authors (own processing)

Out of the 119 organizations reviewed, 43 % were large companies, 20 % medium-sized companies, 25 % small companies. The remaining 12 % of the sample were micro companies.

Figure 2 Research sample characteristic in terms of foreign equity participation



Source: authors (own processing)

Out of the 119 organizations reviewed, 57 % were without foreign equity participation and 43 % were with foreign equity participation.

### Research questions and hypotheses

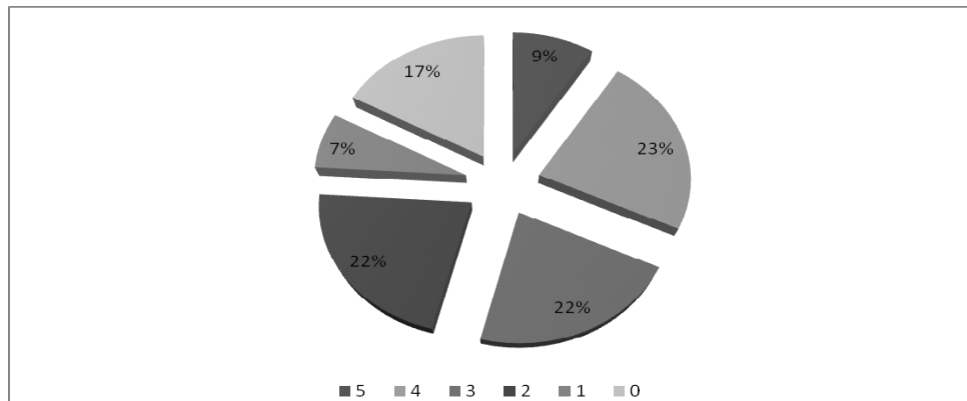
Considering that concept of talent management is relatively new in our business environment, it can be assumed that companies with foreign equity participation would be expected to be more likely than Slovak companies to consider declaring the talent management (as part of the strategy).

Table 1 Research sample characteristic in terms of linking talent management strategy with business goals

Linking Talent Management Strategy with Business Goals	Frequency of answers						Total
	5	4	3	2	1	0	
Absolute frequency	11	27	26	26	8	21	119
Relative frequency	9%	23%	22%	22%	7%	17%	100%

Source: authors (own processing)

Figure 3 Research sample characteristic in terms of linking talent management strategy with business goals



Source: authors (own processing)

*H1: The declaration of linking talent management strategy with business goals is positively related to the size of the company i.e. large and medium-sized organizations are more likely linking talent management strategy with business goals than small-sized and micro organizations.*

Using statistical method ANOVA (testing the differences in means for groups or variables for statistical significance) was found that there is no statistically significant relationship between the variables “size of the organization” (size is perceived in terms of number of employees) and “interconnection of talent management strategy with the organization's strategic objectives”. Based on the measured value  $p = 0.58$  ( $>0.05$ ) indicate no statistically significant differences between means and we cannot accept the alternative hypothesis. Based on the results we can conclude that *the declaration of linking talent management strategy with business goals is not associated with the size of the organization.*

*H2: The declaration of linking talent management strategy with business goals is positively related to the type of equity participation i.e. the organization with foreign equity participation are more likely linking talent management strategy with business goals than organizations without foreign capital participation.*

Formulated alternative hypothesis assumes the existence of statistically significant differences in means of two populations. The hypothesis was tested by using a statistical method Student's t-test determining if two sets of data are significantly different from each other. A difference between two means is significant (at the given) if the calculated t-value is greater than the probability level (p-value). We can conclude that *in organizations with foreign equity participation a talent management strategy is linked to the business goals as well as in organizations without foreign equity participation.* Since no statistically significant differences between organization with foreign equity participation and organization without foreign capital participation were found, the alternative hypothesis is rejected.

Our team participated on project financed by International Visegrad Fund - Standard Grant No. 21220142 "Integrated Talent Management - Challenge and Future for Organisations in the Visegrad Countries" which was solved from January 2013 to December 2013. The project (and monograph) was concerned with the concept of talent management – especially development and implementation of talent management - in the context of business organizations in the Visegrad countries i.e. Czech Republic, Slovak Republic, Poland and Hungary. This research is one of the first research studies to examining talent management in all Visegrad countries (Egerová et. al, 2013) and in its scope can be considered pioneering.

Part of extensive research has been investigating whether researched organizations in V4 countries have a clearly defined talent management strategy and whether talent management strategy is connected with strategic goals of organization. Concerning the existence of defined talent management strategy the results were not very positive in all V4 countries where prevailing tendency to disagree with the statement indicates that the majority of surveyed organizations has no defined talent management strategy. In this area have the organization the largest problems. The situation is not good even in the field of compliance and connection of talent management strategy with strategic goals of an organization - similar results were seen in Slovakia, Poland and Czech Republic (Egerová et. al, 2013).

## **Conclusion**

Incorporating talent into strategic planning and alignment of talent management strategy into corporate strategy is effective tool for growth and improvement of overall business performance. A clear understanding of the organization's business strategies is an important prerequisite for talent management effectiveness. Talent management strategy is relevant for talents identification and definition, specification of abilities and experiences that organisation needs, talents development as well as for retaining and keeping talented employees engaged in order to succeed in global economy.

It was shown that organizations in Slovakia (like the other V4 countries) have in talent management strategies major deficiencies. It is a big mistake because the strategy is a path to the objectives achievement. It is therefore necessary to pay attention to this area and in creation of talent management strategy to be aware of present situation and realistic in determining where the organization wants to get.

## **Súhrn**

Cieľom príspevku je prezentovať realitu implementácie procesov a postupov manažmentu talentov vo slovenskom podnikateľskom prostredí. Nástrojom získavania primárnych dát bolo dotazníkové šetrenie. Prieskum sa zameriaval na skúmanie širšieho komplexu procesov a postupov manažmentu talentov v slovenských podnikoch - identifikáciu, nábor, hodnotenie, rozvoj a udržiavanie talentov. Príspevok prezentuje čiastkové výsledky prieskumu týkajúceho sa prepojenosti a súladu stratégie manažmentu talentov s celkovou stratégiou organizácie. Pre analýzu dát boli použité metódy deskriptívnej a induktívnej štatistiky - ANOVA a Studentov t-test.



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## **MARKETING ANALYSIS - WHAT WILL ATTRACT POTENTIAL TOURISTS TO VISIT THE DESTINATION\***

## **MARKETINGOVÁ ANALÝZA - ČO PRILÁKA POTENCIÁLNYCH TURISTOV NAVŠTÍVIŤ DESTINÁCIU\***

***Abstract:** This paper presents results of research conducted among people living mostly in Slovakia and neighbouring countries. In the first half there is the introduction and the review of literature on related field of destination management, more specifically marketing, branding, positioning and others. This theoretical introduction is followed by methodology definition and presentation of acquired research data. Whole paper is focused on the preferences of the potential tourist, what can attract him or her to the destination and also what can repel them to do so.*

***Key words:** Marketing, destination, tourism, preferences, reasons to visit, management*

***Kľúčové slová:** Marketing, destinácia, turizmus, preferencie, dôvody k návšteve, manažment*

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**JEL:** M30

M - Business Administration and Business Economics; Marketing; Accounting;

### **Marketing tourism destination**

Following the general definition of marketing reference [1] provides two definitions of marketing tourism destination. Firstly, it is the destination marketing as the philosophy of destination management, established on the basis of consumer demand and designed through research and forecasts of destination product placement on the market in order to make profit maximization. Secondly, it is destination marketing as the sum of managed and focused activities, which balance destination objectives and clients needs.

Destination marketing needs to convey a positive image of itself, in such a way that is not only more attractive for potential visitors and tourists, but also for local people to feel identified with the territory and satisfied with their life quality. The development of the destination image must be carried out emphasizing its

personality to avoid going unnoticed in this increasingly globalized and saturated market. It is clear that the administration of every kind of places has to develop a marketing strategy in order to be in the tourist market in the wished position having a good image. [5]

Understanding how customers acquire information is important for marketing management decisions. This is especially true for services, travel and tourism products. Research has demonstrated that tourist information is a valuable concept in understanding destination image and the destination choice process of tourists. Information sources have been included in many research works as important factors for the analysis of tourist behavior. [2] Image plays also an important role for destination marketers so as to differentiate their destination in this highly competitive market [3]. In this sense, formal and informal information sources have an influence on the image formation of a tourist destination. On the other hand, tourists formulate images of alternative destinations, so image also emerges as a critical element in the destination choice process. This is consistent with the notion that information sources and the attributes of the different destinations form the basis for different image and experience expectations. [2] In addition, the information sources of tourist activities have changed greatly over the past fifteen years, due firstly to the impact of new technologies; secondly, to the change in tourist consumer behavior, thirdly to the increase in the number of tourist destinations, and finally to the growing competition among different destinations. [2]

Because of the increasing globalization and all the low cost companies which are helping communications to become more affordable and tourism more diversified, the competition among destinations is growing every day, especially in these economic instability times that many countries are living. And when competition comes up, positioning strategies and marketing actions are planned, not only by private companies, which focus on their own customers, but also the public sector starts a whole series of actions to call the potential visitors' attention to its territory. These actions are not the same for all of them, but they depend on the market they are competing in, the type of destination they are and the goals they are pursuing. In any way, there is always necessary a link among the message conveyed by the different levels of administration, and also among all the campaigns conducted by private companies using the name and the identity of the territory as a trademark. [5]

### **Defining Tourism product**

The tourism product should not be seen from the point of view of the individual producer (such as the hotelier or the transportation company) but from the point of the consumer, thus equating the tourist product with his or her total travel experience. The tourism product should be perceived as including all the elements that are part of a trip. These elements can be found at the destination of the trip, the transit routes and the places of residence. In addition, the consumption these elements take place before, during and after the trip. [4] A tourism product can only be determined in relation to a specific destination, a fact that makes each product unique. The tourism product is a composite product consisting of several

components of tangible and intangible components. These components complement each other, they are functionally interdependent as each one provides only a part of the total sum of benefits sought by tourist. [2, 4]

It is very unlikely that two tourists will have exactly the same travel experience. On the one hand is the subjective perception of each trip. On the other hand, there is a huge number of goods, services and facilities, from which each tourist makes his or her own combination. Thus, each tourist experiences his or her own unique tourist product. In short, from an individual tourist's point of view, each tourist engages in a personalized mix of activities, consumes a personalized set of goods, services and facilities and experiences the trip in a subjective manner. [4]

### **Marketing actions**

Tourist policy manages the promotion of the different territories as tourist destinations through various types of actions. In fact, marketing and promotion are actions that receive more attention, being considered even the origin of the tourist departments and, sometimes, almost their only content. The importance of these marketing actions has caused the creation of the Destination Management Organisations (DMOs), which are the organisations responsible for the management and marketing of destinations and generally fall into one of the following categories [5]:

- *National Tourism Authorities*
- *Regional, provincial or state DMOs*
- *Local DMOs*

These DMOs develop the following actions: governance and the politics of destination making, organisational structure, alternative funding sources, strategic planning and implementation, destination competitiveness, destination positioning, human resource management, relationships between national, state and regional DMOs, destination brand management, integrated marketing communication implementation, performance measures. [6]

The current tourist market, due to globalization and the economic situation we are living, makes the tourist to be more demanding, and it has also created a situation in which if a destination wants to be developed properly, it must stand out from others. That is a task that depends on both the public and the private sector and it has to be developed with the cooperation and the involvement of the inhabitants of the territory, because the image to be transmitted abroad depends on all of them. That image will mark the position of the destination in both the market and target's minds, so the responsible administration should be sure about the message they want to convey and how they are going to do it. A good strategy could mean an increase in the popularity of the destination and an improvement of its image, but an unplanned strategy or a chain of actions that the inhabitants reject, would mean a loss of money and confidence of the administration. [5, 6]

The most valuable assets a country can possess are a positive image and a positive reputation. Every destination has an image, but is not directly under the control of marketers [9]. Destination image can be defined as a sum of an individual's mental

representation of knowledge, feelings, and global impression about an object or a destination [10]. Reference [8] propose an idea that destination image is multidimensional, with cognitive and affective elements. It is a mix of information, feelings, beliefs, opinions, ideas, expectations and perceptions about a certain place.

An image of a brand plays a key role in destination branding. Nevertheless, reference [7] emphasizes that the process of image formation is just a part of whole process. Brand identity is created by the destination marketer and supported by the touristic attraction, history, and people. On the other hand, the brand image is a perception of the receiver and depends on the previous experiences and on the marketer's communication skills [11]. The brand image is a reflection of the brand identity and plays an essential role in the construction of the identity. [11] It reflects how all the brand's elements contribute to the awareness and image. It is a main aspect of the brand's strategic vision because it gives purpose and meaning to the brand [12]. The elements of a strong brand complete each other and they unify the entire process of image building. In return it contributes to the strength and uniqueness of the brand identity [7].

### **Material and Methods**

In order to obtain information about the preferences of the city visitors, we decided to develop a questionnaire in electronic form. The questionnaire survey was conducted in the four weeks between the end of 2012, namely from 19 November 2012, when the questionnaire was launched and continued until 16 December 2012, when we completed data collection and acceded to their subsequent evaluation. The number of respondents was 1584. We used the CAWI method - Computer Assisted Web Interviewing.

For statistical evaluation of the responses as well as for processing graphic output was used spreadsheet editor Microsoft Office Excel 2007. The most interesting results are presented in the following subsection.

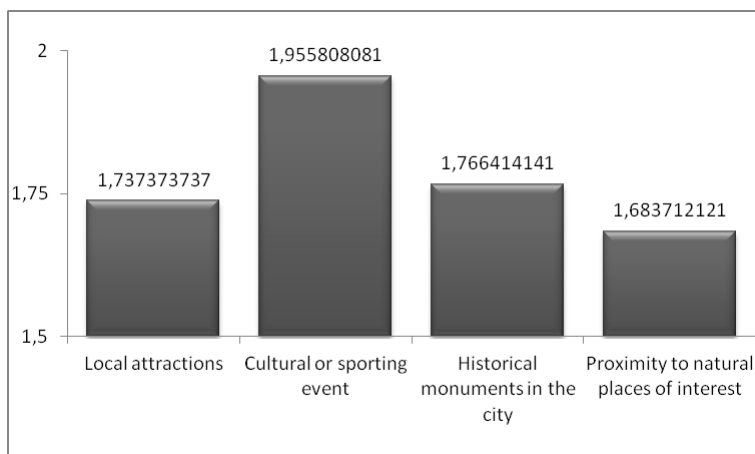
### **Results and Discussion**

When interpreting the results, we decided to break down the respondents into two groups. Beyond the break we chose 25 years and for several reasons. This age for many people is a graduation and entry into employment, which will significantly change the economic opportunities of respondents. In this age people are often purchasing their own accommodation or establishing a family. All the mentioned circumstances have an important role in changing traveler's habits and preferences.

In our sample were 612 respondents who were included in the age group of 25 years and less and 972 respondents and belonging to the group over 25 years. The average age of respondents was at 30.24 years.

In identifying the reasons to visit any city we have specified four factors - local attractions, cultural or sporting event, historical monuments in the city and proximity to natural places of interest. For each of the factors respondents assigned a value 1 - 5 wherein 1 = important, 2 = less important, 3 = neutral, 4 = somewhat unimportant and 5 = totally unimportant. Average rating of each factor we present in the following diagram.

Figure 1 Reasons for visiting the city

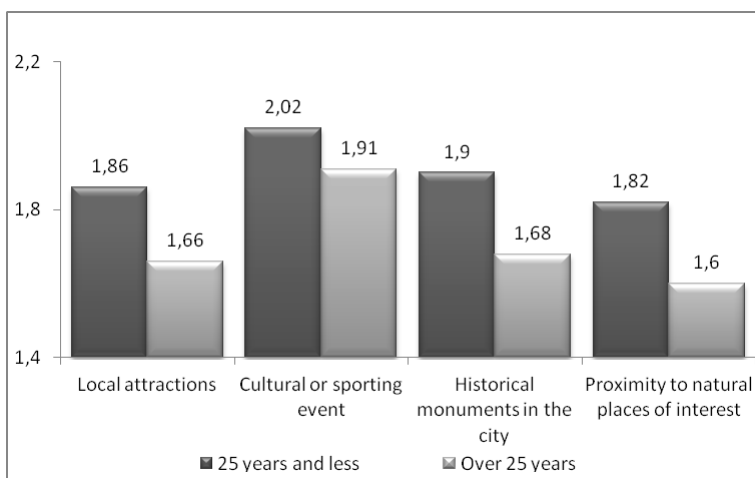


Source: Self elaboration

From the graph we can see that the strongest motivator for visiting the city is with an average assessment of 1.68 proximity to natural places of interest. Others are local points of interest which reached 1.74 mark and historical monuments in the city with an average mark of 1.77. As less powerful, but still quite important motivator respondents identified cultural or sporting events that assigned rating at 1.96.

Responses to this question were evaluated also depending on the age of the respondents, respectively from they belong to the group 25 years or less and more than 25 years. Diversity of responses is shown in chart 2.

Figure 2 Reasons to visit the city depending on age

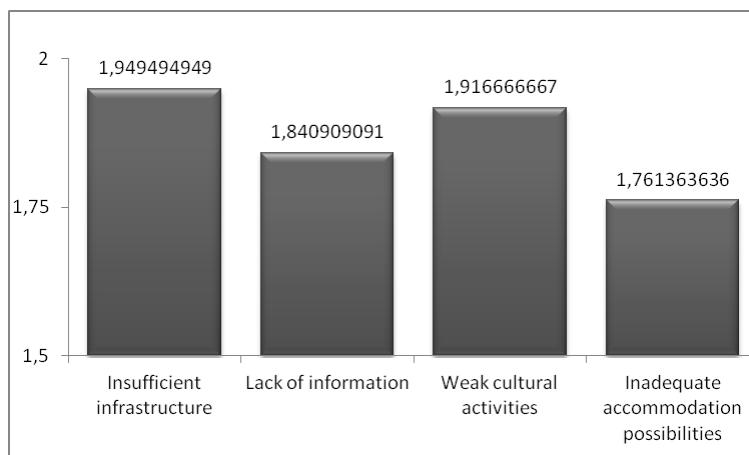


Source: Self elaboration

Despite the fact that the order of the factors remains unchanged in both groups, compared to the overall result, we can notice from the graph interesting detection. Young people assigned to each of the factors significantly lower importance. It is possible to conclude that their needs are more specific, they collect more and want to experience something more. It is therefore necessary to offer them something extra in the pursuit of attracting.

In the next question we were interested in the reasons for which the passenger decide not to visit any city. Also in this case we have specified four factors - insufficient infrastructure, lack of information, weak cultural activities and inadequate accommodation possibilities. The rating system was identical as in previous question.

Figure 3 Reasons against visit the city



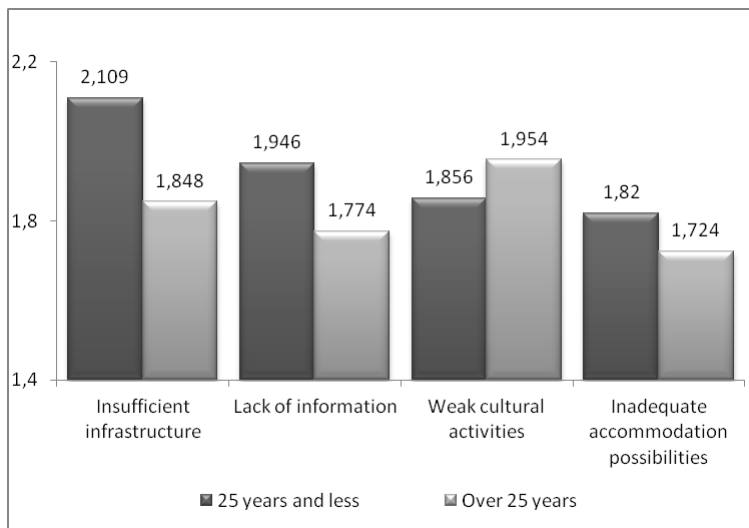
Source: Self elaboration

We see that the most important reason that discouraged people from visiting city is inadequate accommodation possibilities with the average assessment of 1.76. Following are lack of information with a final mark of 1.84 and weak cultural activities (1.92). At the last place is in this case placed a factor of insufficient infrastructure with the evaluation 1.95. However, all four factors were assigned values between important to less important.

Even in this case, we have investigated the importance of each factor depending on the age of the respondents. Average rating is demonstrated in graph 4



Figure 4 Reasons against visit the city depending on age



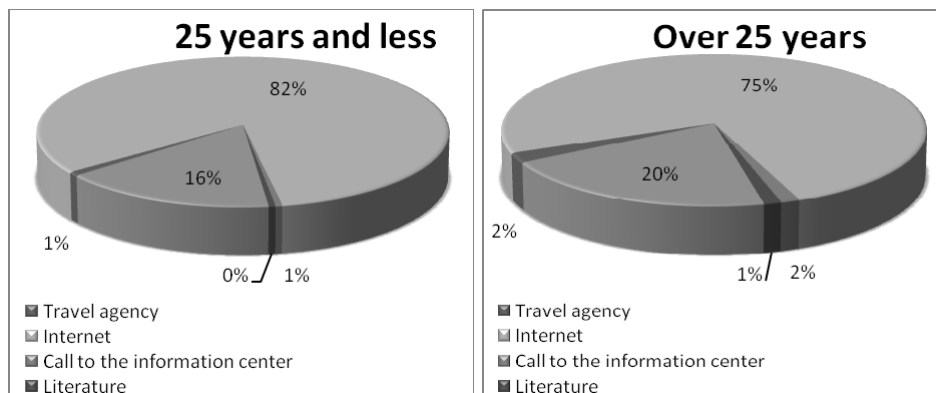
Source: Self elaboration

Overall result showed several opinion shifts when comparing over and under 25 years old respondents. Although both of the groups chose in the first place inadequate accommodation options, but that of the other factors is different. Young people from visiting city discourage weak cultural activities (1.86), followed by lack of information (1.95) and lastly insufficient infrastructure (2.11). Respondents aged 25 years or more are discouraged by lack of information (1.77), insufficient infrastructure (1.85) and finally weak cultural activities (1.95). So we see that the order of priorities is in studied groups different. Also in this case allocated young people in most cases less importance.

Based on these two issues, we could conclude that young people have no high demands to many things, they do not need to such an extent great accommodation respectively they do not mind so much insufficient infrastructure, but on the other hand they want instead more to see and experience. On the other hand, older respondents place when deciding to visit the city more emphasis on comfort, even at the expense of a somewhat lower interesting and attractive offer.

Simply to prepare the perfect offer is not enough to improve city visit rate. It is necessary to provide them enough information and inform them of our offer to attract potential visitors to the city. Of course it is necessary to know where travellers obtained information by choosing their traveller destination. For this purpose we have this information from respondents investigated and we asked them the question of what form of getting information you prefer when you visit a particular city. Even in this case, we have divided the response, depending on the age of two groups. Comparison of preferences we bring in the following diagram.

Figure 5 Comparison of preferences in obtaining information about the city depending on age



Source: Self elaboration

From the comparison we see that the preferences of getting information do not differ significantly among studied groups. In group of older respondents are a little higher degree of focus on more traditional sources, but the differences are not big. In both cases dominates internet, at second place received significant proportion a possibility personal recommendations / references of known. The other three options were represented in both groups only at low levels.

## Conclusion

Many places in Slovakia have a problem how to attract visitors. It is a long term process, and the results of a systematic effort are often apparent only after several years. Real situation is that the potential of our cities is very little exploited. Especially in the eastern part of our country, is this situation highly visible. To a certain degree this is due to insufficient infrastructure (highway missing link) but it does not mean that this argument should serve as an excuse for the absence of any other efforts. Slovak towns have much to offer to tourists and are definitely interesting for them. Due to their cultural-historical development there are many historical, religious and other sights and attractions. Many of them belong to the monuments of national importance, and some have even been included in the UNESCO network.

## Summary

Jedným z hlavných dôvodov prečo zatiaľ nie sme schopní náš potenciál poriadne využiť je absencia uplatňovania marketingových princípov, prípadne sa využívajú marketingové aktivity, ktoré sú na pomerne nízkej úrovni. Často sa stáva, že turista prejde okolo nejakého zaujímavého miesta, ktoré by si inak určite rád pozrel, avšak o jeho existencii nemá ani potuchy a to, že tam niečo také bolo zistí až keď je doma.

K zmene takéhoto stavu je nevyhnutná spoluúčasť všetkých zainteresovaných strán a zároveň využívanie poznatkov z oblasti destinačného marketingu. Ľudí je potrebné prilákať, informovať ich, zabezpečiť im to čo chcú zažiť, naplniť ich očakávania a poskytnúť im nejakú pridanú hodnotu. Pri ich oslovení je potrebné

využívať moderné komunikačné prostriedky. Vhodné sú napr. sociálne médiá, virálne videá, marketing odporúčaní, využívanie QR kódov, guerillových kampaní a pod. Zároveň je nevyhnutné inšpirovať sa aj v zahraničí a svoje poznatky v tomto smere neustále rozvíjať. Nezanedbateľnou výhodou využívania týchto prostriedkov sú okrem iného aj pomerne nízke finančné náklady. Pri ich správnom uplatňovaní existuje vysoký predpoklad, že sa požadovaný efekt dostaví.

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## **ANALYTICAL VIEW OF PERFORMANCE APPRAISAL AND ITS SELECTED ASPECTS\***

### **ANALYTICKÝ POHĽAD NA VYBRANÉ ASPEKTY HODNOTENIA PRACOVNÍKOV\***

***Abstract:** The paper deals with the issue of employee performance appraisal as one of the most important tool of human resource management. The main objective of this paper is to provide an analytical overview of the current state of performance appraisal implementation under the conditions of the Slovak Republic. The based on the analysis of the theoretical background the research was conducted to verify statistically significant differences in the selected aspects of employee appraisal among the businesses varying in size, as well as to detect differences in the application of appraisal methods in various types of work positions.*

***Key words:** Performance appraisal, Performance appraisal methods, Employee performance.*

***Kľúčové slová:** Hodnotenie výkonnosti, metódy hodnotenia výkonnosti, výkonnosť zamestnancov.*

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**JEL:** M12

M - Business Administration and Business Economics; Marketing; Accounting;

#### **Introduction**

Current dynamic era places high demands on both the society as well as individuals. Regarding the fact that efforts of every organization are to reach prosperity and maintain its competitiveness, businesses are forced to pay attention to appraisal of work performance of their employees. There is no doubt about the selection and application of an appropriate method of appraisal requiring responsible approach and a thorough analysis of the business environment, as it is the adequately chosen concept of performance appraisal which may play a very important role in the process of development of an organization.

## **Theoretical background of Performance appraisal in the context of Human resource management**

Development of the issue of performance appraisal is both at the theoretical and the practical level becoming more and more the main focus of attention. Performance appraisal used to be regarded as a trivial process being a responsibility of the line manager, whose duty was to elaborate an annual report on the performance of employees.

Fletcher (2001) suggest that the „Performance appraisal was once considered as a process involving a line manager completing an annual report on subordinate's performance. But as time passes it has become an integral part of performance management system and performance appraisal is today considered as the key element of performance management.“

Modern approach to appraisal of employees represents a uniform procedure for the detection, assessment and adjustment efforts, including setting objectives and targets, which affect employee performance appraisal. Armstrong (2004) describe performance management “as a strategic and integrated approach to delivering sustained success to organizations by improving the performance of the people who work in them and by developing the capability of teams and individual contributors.” Fletcher (2001) further defines performance appraisal as „a general heading for a variety of activities through which organizations seek to assess employees and develop their competence, enhance performance and distribute rewards.“

The purpose of appraisal of performance of employees is not only to recognize the current level of work performance of a worker, but also to recognize their strengths and weaknesses, create a base for employee remuneration according to the reached results of their work, motivate employees to improve their performance, recognize the needs in the area of education and development, recognize the worker's potential (their margins and limits), create a basis for planning the needs of employees and identifying the future work tasks, etc. (Hitka, 2013). Performance management at the individual level consists of synchronization of work of each employee with the strategic plan of the organization, so that the efforts of an employee are oriented on the products and processes which contribute to the success of the organization as a whole (Koubek, 2007).

We have wide range of existing performance appraisal methods, which are used to be classified according the common factor - the time horizon. Three groups of methods may be distinguished according to the time horizon: methods focusing on the past that are targeted at past events; methods focusing on the present state that evaluate the current situation and methods focusing on the future that are oriented towards future forecasts (Hroník, 2007). He also suggests, that the principal target of performance appraisal should be just future. Werther and Davis (1992) were first, who divided methods of performance appraisal into the methods oriented to the past

and future one. A similar system of method classification is also recognised by Dvořáková (2012) who categorises methods according to the time criterion and distinguishes between methods concentrating on work already performed (on the past) and methods concentrating on the future and identifying the development potential of employees. Methods focusing on the past have the advantage of dealing with work already done and are therefore relatively measurable. The disadvantage of this method is the impossibility of result alteration. Employee performance appraisal oriented towards the future focuses on future performance (Duda, 2008). In the literature, we also meet with another division according to the methods mentioned three parameters namely ( 1 ) Measurement of properties - input, ( 2 ) Measurement of behavior - the process ( 3 ) Measurement results - output ( Krajčiová, 2013).

### **Material and Methods**

An overview study created conditions for realization of a research under conditions of the Slovak Republic. The research subject is the issue of conducting appraisal of employees in organizations in the Slovak Republic. Objective of the research study was:

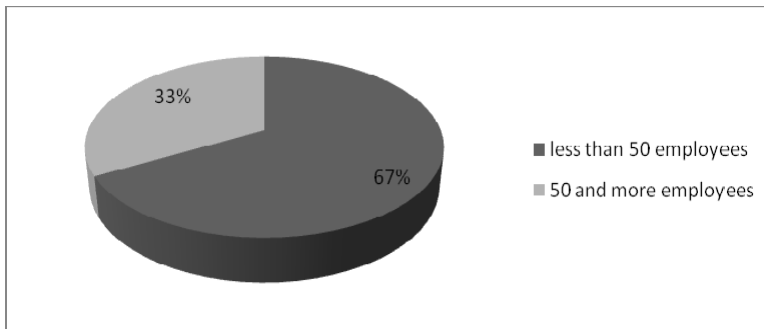
a) to verify the existence of statistically significant differences in conducting appraisal of workers among the businesses varying in size from the viewpoint of the following aspects:

1. Time horizon of appraisal of employees
2. Frequency of carrying out an appraisal of employees
3. Range of appraisal of employees

b) to detect statistically significant differences in applying the individual methods of appraisal in various types of work positions.

For the purpose of fulfilling the research goal, a research was carried out in December 2013 on the sample of 33 organizations from the Slovak Republic. Regarding the relatively small sample, the statistically significant differences were being detected only between two size categories of businesses, that is, businesses with the number of employees up to 50 and businesses with the number of employees over 50. The research sample is illustrated in Figure 1.

Figure 1 Composition of survey sample in terms of firm size (expressed in number of employees)



Source: Self elaboration

Primary collection of data was carried out by using a standardized questionnaire. Personal managers were addressed in person, by telephone or by e-mail. To fulfill the individual partial goals, 4 statistical hypotheses were tested by using the Mann-Whitney U test and Chi-Square test.

## Results and Discussion

In the first part of the research we assumed that appraisal is a personnel activity carrying out which would differ according to the number of employees of a business.

We have focused on the following three aspects of HR activities:

- Time horizon of appraisal of employees,
- Frequency of carrying out an appraisal of employees,
- Range of appraisal of employees

The subject of the comparison were two size categories of enterprises:

- Small enterprises (less than 50 employees)
- Medium enterprises (over 50 employees)

H1: We assume there are statistically significant differences in the time horizon of appraisal of employees among the businesses differing in size.

Appraisal of workers is a personnel activity which is directly related to the employees of a business. We assumed that the businesses which have smaller numbers of employees would not carry out staff appraisal as often as those with greater numbers of employees for the reason that with a small number of employees, the superordinate or manager is able to record their performance continuously without a formally conducted appraisal. The survey results demonstrate that the majority of companies (48.5%) carry out an appraisal of workers app. once a year, app. 30% of companies carry out this activity semi-annually, app. 20% of companies carry it out less than once a year. When comparing these results from the viewpoint of organization size, it is clear that bigger companies conduct an appraisal of employees usually once a year whereas in the group of small businesses, the



majority conducts this appraisal less than once a year. Hypothesis H1 was tested by means of the Mann-Whitney U test. The results are presented in Table 1.

Table 1 Detection of a statistically significant difference in the time horizon of appraisal of employees among the businesses differing in size.

The number of employees		N	Average ranking	Median	Mann Whitney U - test	P-value
Time horizon of appraisal	Less than 50 employees	22	17.50	2.00	110.000	.649
	50 and more employees	11	16.00	2.00		
	Together	33				

Source: Elaboration Statistics 21

Using the statistical test it was found that  $p\text{-value} > 0.05$ , therefore H1 is rejected. The assumption that the number of employees of a business would be related to how often the businesses conduct an appraisal was not confirmed.

H2: We assume there are statistically significant differences in the frequency of conducting the appraisal of employees among the businesses varying in size.

Another aspect, which was a subject of this research, is whether the businesses carry out an appraisal on a regular or irregular basis. On the basis of a comparison of the results gained from a survey it was found out that employee appraisal is conducted regularly rather in bigger companies than in the small ones. This assumption was verified by means of the Chi-Square test.

Table 2 Detection of a statistically significant difference in the frequency of conducting the appraisal of employees among the businesses varying in size.

Chi-kvadrat	Df	P-value
.589	1	.443

Source: Elaboration Statistics 21

As Table 2 illustrates,  $p\text{-value} > 0.05$ , therefore H2 is rejected. It cannot be claimed that the employee appraisal of a business on a regular or irregular basis is related to the number of its employees.

H3: We assume there are statistically significant differences in the appraisal range among the businesses varying in size.

The last aspect we focused on when comparing the businesses varying in size is whether the appraisal touches all groups of employees or only the selected ones. The majority of businesses (77.42%) carry out an appraisal of all their employees, which

may be assessed positively. Whether this aspect differs according to the size of the business was verified by means of the Chi-Square test.

Table 3 Detection of a statistically significant differences in the appraisal range among the businesses varying in size.

Chí-kvadrát	Df	P-value
4.043	1	.044

Source: Elaboration Statistics 21

When verifying the hypothesis H3, the detected  $p\text{-value} < 0.05$  confirmed the hypothesis H3. We may therefore claim that whether a business focuses on appraisal of all its employees or only of the selected groups of employees is related to the overall number of employees of this business. It was found out that the businesses with smaller number of employees carry out an appraisal rather of all their employees, which differs from the businesses with greater number of employees. This may be justified by claiming that at great numbers of employees, carrying out the appraisal of all employees is much more demanding time-wise, financially and administration-wise, which may lead to the tendency of bigger companies to conduct appraisal of only the selected groups of employees.

H4: We assume there are statistically significant differences in using the methods of appraisal in different categories of work positions.

Part of the research was also focusing on the methods which businesses use when evaluating their employees. According to the results of the given survey, the most frequently used methods are evaluation interview (75.76%), control over implementation of the set objectives (75.76%), and the method of comparing one worker to the others (66.66%).

We also focused on whether various appraisal methods are used in appraisal of employees at the lower, middle, higher, and narrowly specialized work positions. The survey results suggest that in appraisal of employees at the lower work positions, the most frequently used is the method of comparing one employee to the others, in the case of the middle work positions (administration and technical economic workers), the most frequently applied is the interview method. When evaluating workers at the higher (i.e. directing, managing) work positions, the majority of businesses of the given sample use the method of control over implementation of the set objectives. The method of appraisal questionnaire is mostly applied in appraisal of employees at the narrowly specialized work positions.

Table 4 Detection of statistically significant differences in using the methods of appraisal in different categories of work positions

Chí-kvadrát	Df	P-value
49.98	18	0

Source: Elaboration Statistics 21

The result of the Chi-Square test corresponds with the value  $p < 0.05$ , therefore the hypothesis H4 is accepted. We confirmed the assumption that when evaluating workers at various work positions, different appraisal methods are used. This finding is logical as the individual work positions differ from each other in their workload and demands placed on the holders of these positions, which leads to the need of different appraisal procedures.

### Summary

The report deals with the issue of appraisal as one of the significant activities of human resource management. The analysis of literary sources created preconditions for realization of a research on the sample of businesses in the Slovak Republic. The research study followed two partial objectives – to verify the statistically significant differences in appraisal of employees among the businesses varying in size, and to verify the statistically significant difference in using the appraisal methods in various categories of work positions. To fulfill the first partial research objective, the attention was paid to three aspects of conducting the staff appraisal. We assumed that businesses with various numbers of employees would differ in the time horizon of carrying out the staff appraisal, in the frequency of appraisal of their employees, and in the range of carrying out this personnel activity. In the case of the first two aspects, the assumptions about existence of statistically significant differences were not confirmed. The hypothesis was confirmed in the case of the third aspect, therefore it may be claimed that businesses with smaller numbers of employees provide appraisal of their employees to a greater extent, contrarily to the bigger businesses which evaluate only the selected groups of their employees. The second part of the research was aimed at the issue of using the individual appraisal methods. Besides finding the most frequently preferred appraisal methods, we also tried to verify whether applying the individual appraisal methods differs in accordance with the work position occupied by the evaluated worker. This assumption was confirmed, which lead to another finding that selection of methods used in appraisal of an employee depends on the type of the work position this employee occupies. The purpose of conducting this research was to introduce the current findings about the conditions in the area of providing staff appraisal as an important activity in the area of human resource management in the Slovak conditions.

### Súhrn

Príspevok sa zaoberá problematikou hodnotenia ako jednou z významných činností riadenia ľudských zdrojov. Analýza literárnych podkladov vytvorila predpoklady pre realizáciu výskumu na vzorke podnikov pôsobiach v SR. Výskumná štúdia

sledovala dva parciálne ciele, a to overiť štatisticky významné rozdiely v hodnotení pracovníkov medzi veľkostne odlišnými podnikmi, a overiť existenciu štatisticky významného rozdielu vo využívaní metód hodnotenia pri rôznych kategóriách pracovných pozícií. Pre naplnenie prvého čiastkového cieľa výskumu bola pozornosť zameraná na tri aspekty realizácie hodnotenia pracovníkov. Predpokladali sme, že podniky s rôznym počtom zamestnancov sa budú odlišovať v časovom horizonte vykonávania hodnotenia pracovníkov, vo frekvencii hodnotenia svojich pracovníkov a v rozsahu vykonávania tejto personálnej činnosti. V prípade prvých dvoch aspektov sa predpoklady o existencii štatisticky významných rozdielov nepotvrdili. Hypotéza sa potvrdila v prípade tretieho aspektu, preto možno konštatovať, že podniky s nižším počtom zamestnancov zabezpečujú hodnotenie pracovníkov vo väčšom rozsahu na rozdiel od väčších podnikov, ktoré hodnotia len vybrané skupiny zamestnancov. Druhá časť výskumu bola venovaná problematika využívania jednotlivých metód hodnotenia. Okrem zistenia najčastejšie preferovaných metód hodnotenia sme overovali, či uplatňovanie jednotlivých hodnotiacich metód sa líši v závislosti od toho, akú pracovnú pozíciu hodnotený pracovník zastáva. Tento predpoklad sa potvrdil, čím sme dospeli k ďalšiemu zisteniu, a to, že voľba metód využívaných pri hodnotení pracovníka závisí od toho, aký typ pracovnej pozície zamestnanec zastáva. Účelom realizácie výskumu bolo priniesť aktuálne poznatky o súčasnom stave v oblasti zabezpečovania hodnotenia pracovníkov ako dôležitej činnosti v oblasti riadenia ľudských zdrojov v podmienkach SR.

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## **ANALYSIS OF DEVELOPMENT AND INTERDEPENDENCE BETWEEN SELECTED FOOD INDICES**

### **ANALÝZA VÝVOJA A VZÁJOMNEJ ZÁVISLOSTI VYBRANÝCH POTRAVINOVÝCH INDEXOV**

**Abstract:** *Food and Agriculture Organization of the United Nations (FAO) publishes in its activities the Food Price Index (FFPI) which purposes to help in monitoring changes in global agricultural commodity markets. It consists of five commodity group price indices, Meat Price Index, Dairy Price Index, Cereals Price Index, Oil and Fat Price Index, Sugar Price Index. The aim of the paper is to analyze the evolution of FFPI parts and identify statistically significant effect of selected variables on Cereal and Sugar indices using a linear regression model.*

**Key words:** *Food Price Index, FAO, linear regression model.*

**Kľúčové slová:** *Index cien potravín, Potravinová a poľnohospodárska organizácia, ekonometrický model, test*

**JEL:** Q11

#### **Introduction**

Food and Agriculture Organization of United Nations (FAO), an intergovernmental organization, has 194 Member Nations, two associate members and one member organization, the European Union. Its employees come from various cultural backgrounds and are experts in the multiple fields of activity FAO engages in. FAO's staff capacity allows it to support improved governance inter alia, generate, develop and adapt existing tools and guidelines and provide targeted governance support as a resource to country and regional level FAO offices. Headquartered in Rome, Italy, FAO is present in over 130 countries.

The three main goals of the Food and Agriculture Organization of United Nations (FAO) are: the eradication of hunger, food insecurity and malnutrition; the elimination of poverty and the driving forward of economic and social progress for all; and, the sustainable management and utilization of natural resources, including land, water, air, climate and genetic resources for the benefit of present and future generations. [10]

Five main areas of FAO's activities [10]:

- Putting information within reach and supporting the transition to sustainable agriculture.
- Strengthening political will and sharing policy expertise.

- Bolstering public-private collaboration to improve smallholder agriculture.
- Bringing knowledge to the field.
- Supporting countries prevent and mitigate risks.

According to the Food security portal, the Cereals Price Index rose 10 points in March, the second consecutive month of increases. Several causes factored into this increase: strong global grain imports, continuing dry weather in the United States, unfavorable weather in Brazil, and continued unrest in the Black Sea region. Wheat and maize are the most impacted by these factors, while rice remains relatively stable. Despite the increase in March, however, cereal prices remain below the highs seen in March 2013. [12]

FAO has highlighted the food insecurity problem facing the globe: food production will have to increase by 70% in 2050 to keep up with a global population that is projected to grow from 6 billion to 9 billion. There has to be more investments in agriculture to improve productivity, which will be critical to the goal of achieving food security. [2]

In the paper we try to demonstrate and to highlight that some of FAO food price indexes are in a greater or lesser extent interlinked each other.

## **Material and methods**

### *The FAO Food Price Index (FFPI)*

The FAO Food Price Index (FFPI) was introduced in 1996 as a public good to help in monitoring developments in the global agricultural commodity markets. The only major modification made to it – until now – was in 2009, when its base period was updated to 2002–2004.

The index includes the following 5 groups of 23 commodities [6]:

- *Meat Price Index*: Consists of 3 poultry meat product quotations (the average weighted by assumed fixed trade weights), 4 bovine meat product quotations (average weighted by assumed fixed trade weights), 2 pig meat product quotations (average weighted by assumed fixed trade weights), 1 ovine meat product quotation (average weighted by assumed fixed trade weights); the 4 meat group average prices are weighted by world average export trade shares for 2002-2004.
- *Dairy Price Index*: Consists of butter, skimmed milk powder, whole milk powder, cheese, casein price quotations; the average is weighted by world average export trade shares for 2002-2004.
- *Cereals Price Index*: This index is compiled using the grains and rice price indices weighted by their average trade share for 2002-2004. The Grains Price Index consists of International Grains Council (IGC) wheat price index; itself average of 9 different wheat price quotations, and 1 maize export quotation; after expressing the maize price into its index form and converting the base of the IGC index to 2002-2004. The Rice Price Index consists of 3 components containing average prices of 16 rice quotations: the components are Indica,

Japonica and Aromatic rice varieties and the weights for combining the three components are assumed (fixed) trade shares of the three varieties.

- *Oil and Fat Price Index*: Consists of an average of 11 different oils (including animal and fish oils) weighted with average export trade shares of each oil product for 2002-2004.
- *Sugar Price Index*: Index form of the International Sugar Agreement prices with 2002-2004 as base.

This construction includes the use of 73 price series.

The objective of this paper is to find correlation between selected FAO indices and try to explain it. The aim is to find and develop the best linear model showing the dependencies between selected variables. The data in the model are annual data from 1990 to 2014 obtained from the FAO database. The basic design model reflects the impact of all these explanatory variables on the explained variable – *Cpi* and *Spi*.

The model was made in freely available comprehensive statistical and graphical programming language *R* (version 2.13.1.). For creation a linear model and its testing were loaded packages *Akima*, *fBasics*, *lmtest*, *car* and the following data:

- *Cpi* (Cereals price index), *Spi* (Sugar price index) – Explained variables
  - *Mpi* (Meat price index)
  - *Dpi* (Dairy price index)
  - *Cpi* (Cereals price index)<sup>1</sup>
  - *Opi* (Oils price index)
  - *Spi* (Sugar price index)<sup>2</sup>
- } Explanatory variables

#### *Normality of residues testing – Jarque-Bera Test*

Normality of the distribution of casual failures is the basis for statistical inference of the model (model parameters and testing the model as a whole, interval estimation of parameters etc.). The test measures the difference between selected skewness and kurtosis of residues and skewness and kurtosis of normal distribution.

$$H_0: u_t \sim N(0, \sigma^2)$$

$$H_1: u_t \sim N(0, \sigma^2)$$

#### *Heteroscedasticity testing – Breusch-Pagan Test*

Heteroscedasticity is inconstancy of casual failures and residues variance. It is a violation of the assumption of dispersions constancy in linear econometric model. Heteroscedasticity causes that the parameter estimates of econometric model, obtained by the method of least squares, lose some optimal properties (undistortion). Breusch-Pagan test compared to other tests for the presence of heteroscedasticity in the examined model covers a wider range of alternative hypotheses to the null hypothesis of homoskedasticity.

<sup>1</sup> *Cpi* is used as explanatory variable by *Spi*-model

<sup>2</sup> *Spi* is used as explanatory variable by *Cpi*-model



$H_0$ : Heteroscedasticity is present in the model  
 $H_1$ : Heteroscedasticity is not present in the model

#### *Autocorrelation testing – Durbin-Watson Test*

The second requirement is the zero covariance assumption of off-diagonal elements in the covariance matrix of casual components. Unless this condition is fulfilled there is autocorrelation of casual components in the model. The consequences of autocorrelation are similar to those of heteroscedasticity. Estimated variances and standard errors, using conventional formulas, are biased and the quality of inductive conclusions is losing momentum. For testing autocorrelation we used Durbin-Watson test.

$H_0$ : Autocorrelation is present in the model  
 $H_1$ : Autocorrelation is not present in the model

#### *Multicollinearity testing – VIF (variance inflation factor)*

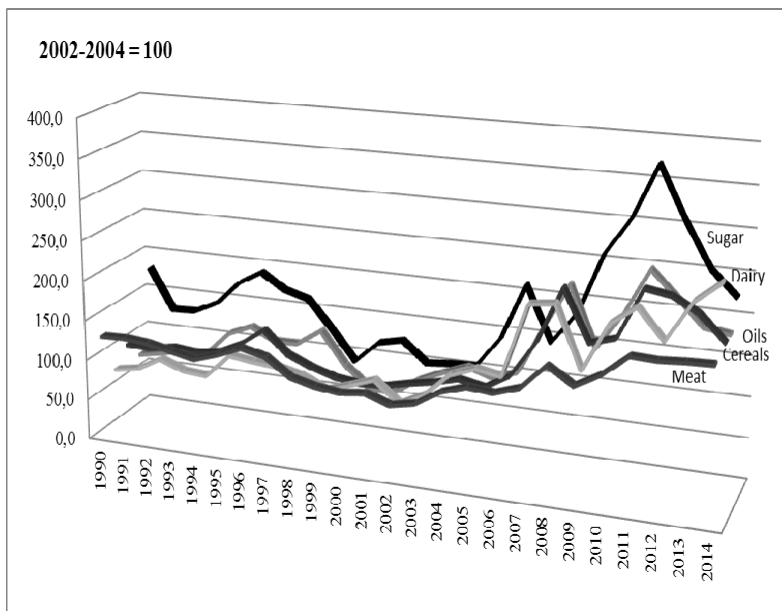
Multicollinearity is interdependence of explanatory (independent) variables and reduces the accuracy of the estimate of regression coefficients, due to the large standard errors of least squares estimator. Simple diagnostics of collinearity is VIF.

### **Results**

The FAO Food Price Index is a measure of the monthly change in international prices of a basket of food commodities. It consists of the average of five commodity group price indices, weighted with the average export shares of each of the groups for 2002-2004.

Under the new approach, the index includes the following 23 commodities: wheat (10 price quotations monitored and reported by the IGC), maize (1 quotation) and rice (16 quotations) for cereals; butter, whole milk powder, skimmed milk powder (2 quotations for each) and cheese (1 quotation) for the dairy group; poultry (13 quotations), pig (6 quotations), bovine (7 quotations) and ovine (1 quotation) for the meat dairy group; sugar (1 quotation); the oils group consists of one oil price quotation for soybean, sunflower, rapeseed, groundnut, cotton seed, copra, palm kernel, palm, linseed and castor. This construction, thus, includes the use of 73 price series. [10]

Figure 1 FAO Food Commodity Price Indices



Source: Food and Agriculture Organization of the United Nations

We decided to use regression model to analyze changes of explained variable that are contingent by changes of explanatory variables.

As explained variables we chose Cereals price index because we consider cereals for most important food article and Sugar price index because sugar recorded in recent years the largest price increase. Regression model simulates the dependence of explained variable on explanatory variables:

$$y_i = \beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2} + \dots + \beta_k x_{ik} + \varepsilon_i \quad (1)$$

- $y_i$  –  $i$ -th value of explained variable
- $\beta_0, \beta_1, \dots, \beta_k$  – unknown parameters of the regression model
- $x_i$  –  $i$ -th value of explanatory variables
- $\varepsilon_i$  – random error of  $i$ -th observation

Due to testing hypothesis we tried to find statistically significant regression coefficients. Hypotheses were as follows:

- *Null hypothesis*

$H_0: \beta_1 = 0$  ( $\beta_2 = 0$ ); ( $\beta_3 = 0$ ); ( $\beta_4 = 0$ ) – regression coefficient is not statistically significant.

- *Alternative hypothesis*

$H_1: \beta_1 \neq 0 (\beta_2 \neq 0); (\beta_3 \neq 0); (\beta_4 \neq 0)$  – regression coefficient is statistically significant.

We tested models on significance level  $\alpha = 0,01$  and  $\alpha = 0,1$ .

For creation a single-equation linear model we used following commands:

```
> model1=lm(Cpi~1+Dpi+Opi+Spi+Mpi,data=data1)
```

```
> summary(model1)
```

Estimated vectors of regression coefficients in the model generate impact of explanatory variables on the explained variable on significance level  $\alpha$ . Realized test of statistical significance of variables determine which explanatory variables we considered as important determinants of *Cpi*. This fact illustrates the following:

Table 1 Model 1 – coefficients

<b>Residuals:</b>					
Min	1Q	Median	3Q	Max	
-22.1703	-10.0791	-0.2993	10.7156	18.4492	
<b>Coefficients:</b>					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	-26.909811	15.742002	-1.709	0.102844	
Dpi	0.057302	0.108340	0.529	0.602688	
Opi	0.602871	0.125472	4.805	0.000108 ***	
Spi	0.009913	0.073172	0.135	0.893590	
Mpi	0.554227	0.224705	2.466	0.022806 *	
---					
Signif. codes:	0 '***'	0.001 '**'	0.01 '*'	0.05 '.'	0.1 ' '
Residual standard error: 12.4 on 20 degrees of freedom					
Multiple R-squared: 0.9531, Adjusted R-squared: 0.9437					
F-statistic: 101.6 on 4 and 20 DF, p-value: 5.409e-13					

Source: own processing in R 2.13.1

Table 2 Model 1 – coefficients for significant variables

<b>Residuals:</b>				
Min	1Q	Median	3Q	Max
-23.624	-10.235	-1.122	12.081	17.776
<b>Coefficients:</b>				
	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-30.07596	12.98680	-2.316	0.030273 *
Opi	0.64508	0.08503	7.587	1.41e-07 ***
Mpi	0.60922	0.15880	3.836	0.000898 ***
---				
Signif. codes:	0 '***'	0.001 '**'	0.01 '*'	0.05 '.' 0.1 ' ' 1
Residual standard error: 11.9 on 22 degrees of freedom				
Multiple R-squared: 0.9524, Adjusted R-squared: 0.9481				
F-statistic: 220.3 on 2 and 22 DF, p-value: 2.815e-15				

Source: own processing in R 2.13.1

Table 3 Model 1 – testing

<b>Normality test</b>	<b>jbTest(resid(model1))</b> Jarque - Bera Normality Test Test Results: PARAMETER: Sample Size: 25 STATISTIC: LM: 1.133 ALM: 1.218 P VALUE: LM p-value: 0.386 ALM p-value: 0.439 Asymptotic: 0.568
<b>Heteroscedasticity test</b>	<b>bptest(model1)</b> studentized Breusch-Pagan test data: model1 BP = 3.5754, df = 2, p-value = 0.1673
<b>Autocorrelation test</b>	<b>&gt; dwtest(model1)</b> Durbin-Watson test data: model1 DW = 1.5206, p-value = 0.0551
<b>Multicollinearity test</b>	<b>vif(model1)</b> Opi    MPI 3.617579 3.617579

Source: own processing in R 2.13.1

Test results indicate presence of autocorrelation in the tested *Model 1* (p-value is close to significance level  $\alpha$ ). We need to remove unwanted present characteristics from the tested model (model1). Therefore, it is necessary to replace the original variables with differentiate variables and create new model (model2).

Table 4 Model 2 – coefficients

<b>Residuals:</b>					
	Min	1Q	Median	3Q	Max
	-26.1473	-7.5801	0.7528	8.8390	19.0345
<b>Coefficients:</b>					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	0.19892	2.90201	0.069	0.946068	
diff(Dpi)	-0.23017	0.13124	-1.754	0.095584 .	
diff(Mpi)	1.24082	0.31307	3.963	0.000833 ***	
diff(Opi)	0.55295	0.12028	4.597	0.000197 ***	
diff(Spi)	-0.07150	0.07727	-0.925	0.366413	
---					
Signif. codes:	0 '***'	0.001 '**'	0.01 '*'	0.05 '.'	0.1 ' '
Residual standard error: 13.7 on 19 degrees of freedom					
Multiple R-squared: 0.7962, Adjusted R-squared: 0.75					
F-statistic: 18.56 on 4 and 19 DF, p-value: 2.341e-06					

Source: own processing in R 2.13.1

Based on the model test, we removed the exogenous variables, which according to the obtained t-value showed as not significant.

```
> model2=lm(diff(Cpi)~1+diff(Mpi)+diff(Opi),data=data1)
```

```
> summary(model2)
```

Table 5 Model 2 – coefficients for significant variables

<b>Residuals:</b>					
	Min	1Q	Median	3Q	Max
	-29.0059	-6.2414	-0.1894	11.3060	17.6004
<b>Coefficients:</b>					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	-0.7487	2.9256	-0.256	0.800495	
diff(Mpi)	0.9902	0.2839	3.488	0.002195 **	
diff(Opi)	0.4626	0.1114	4.153	0.000451 ***	
---					
Signif. codes:	0 '***'	0.001 '**'	0.01 '*'	0.05 '.'	0.1 ' '
Residual standard error: 14.06 on 21 degrees of freedom					
Multiple R-squared: 0.7629, Adjusted R-squared: 0.7404					
F-statistic: 33.79 on 2 and 21 DF, p-value: 2.73e-07					

Source: own processing in R 2.13.1

Gradually improved *Model 2* appears to be optimal, values of variables ( $\Pr(>|t|)$ ) are sufficiently low. *Model 2* has a good explanatory power, it can be tested on significance level  $\alpha = 0.01$ .

Table 6 Model 2 – testing

<b>Normality test</b>	<b>Jarque - Bera Normality Test</b> Test Results: PARAMETER: Sample Size: 24 STATISTIC: LM: 1.747 ALM: 2.094 P VALUE: LM p-value: 0.187 ALM p-value: 0.224 Asymptotic: 0.417
<b>Heteroskedasticity test</b>	<b>studentized Breusch-Pagan test</b> data: model2 BP = 1.2928, df = 2, p-value = 0.5239
<b>Autocorrelation test</b>	<b>Durbin-Watson test</b> data: model2 DW = 1.7574, p-value = 0.2762
<b>Multicollinearity test</b>	<b>&gt; vif(model2)</b> diff(Mpi) diff(Opi) 1.47435 1.47435

Source: own processing in R 2.13.1

Tests confirmed that *Model 2* is no longer burdened with undesirable properties and can be interpreted. We reject the null hypothesis in 2 cases and we can interpret results according to estimated regression coefficients by *Mpi* and *Opi*.

Next realized test of statistical significance of variables determine which explanatory variables we considered as important determinants of *SpI*. For creating optimal model we used differentiate variables again.

Table 7 Model 3 – coefficients for significant variables

<b>Residuals:</b>					
Min	1Q	Median	3Q	Max	
-87313	-27.740	-1.401	29.492	67.027	
<b>Coefficients:</b>					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	3.1907	8.2902	0.385	0.7042	
diff(Dpi)	- 0.6402	0.3099	-2.066	0.0514	
diff(Mpi)	1.5852	0.7937	1.997	0.0589	
---					
Signif. codes:	0 '***'	0.001 '**'	0.01 '*'	0.05 '.'	0.1 ' '
Residual standard error: 39.3 on 21 degrees of freedom					
Multiple R-squared: 0.2007, Adjusted R-squared: 0.1246					
F-statistic: 2.637 on 2 and 21 DF, p-value: 0.09515					

Source: own processing in R 2.13.1

*Model 3* has a good explanatory power it can be tested on significance level  $\alpha = 0.1$ .

Table 8 Model 3 – testing

<b>Normality test</b>	<b>Jarque - Bera Normality Test</b> Test Results: PARAMETER: Sample Size: 24 STATISTIC: LM: 0.278 ALM: 0.222 P VALUE: LM p-value: 0.859 ALM p-value: 0.89 Asymptotic: 0.87
<b>Heteroskedasticity test</b>	<b>studentized Breusch-Pagan test</b> data: model3 BP = 3.4227, df = 2, p-value = 0.1806
<b>Autocorrelation test</b>	<b>Durbin-Watson test</b> data: model3 DW = 1.7228, p-value = 0.2672
<b>Multicollinearity test</b>	<b>&gt; vif(model3)</b> diff(Dpi) diff(Mpi) 1.474036 1.474036

Source: own processing in R 2.13.1

Tests confirmed that *Model 3* is no longer burdened with undesirable properties and can be interpreted. We reject the null hypothesis again in 2 cases and we can interpret results according to estimated regression coefficients by *Dpi* and *Mpi*. If the meat price index increases by one unit then the price index of cereals will increase by 0.99 units and if oil price index increases by one unit the cereal price index will rise by about 0.46 units. If the meat price index increases by one unit the sugar price index will rise by about 1.58 units and if the price index for dairy products will increase by one unit then the sugar price index falls by 0.64 units.

## Súhrn

V naformulovaných lineárnych regresných modeloch – Model 1, Model 2 a Model 3 bola prostredníctvom vybraných testov overená prítomnosť nežiaducich charakteristík. Testy potvrdili, že Model 1 je zaťažený autokoreláciou, Modely 2 a 3 však už takto zaťažené nie sú a možno ich výsledky interpretovať. V prípade Modelu 2 sa ako štatisticky významné premenné vplyvajúce na Index cien obilnín (*Cpi*) ukázali Index cien mäsa (*Mpi*) a Index cien olejov (*Opi*). Vplyv možno interpretovať nasledovne, ak Index cien mäsa vzrastie o jednu jednotku potom Index cien obilnín vzrastie o 0,99 jednotky, ak Index cien olejov vzrastie o jednu jednotku potom Index cien obilnín vzrastie o približne 0,46 jednotky. V Modeli 3 sa ako štatisticky významné premenné vplyvajúce na Index cien cukru (*Spí*) ukázali Index cien mäsa (*Mpi*) a Index cien mliekarenských výrobkov (*Dpi*). Ak Index cien mäsa vzrastie o jednu jednotku potom Index cien cukru vzrastie približne o 1,58 jednotky a ak Index cien mliekarenských výrobkov vzrastie o jednu jednotku potom Index

cien cukru poklesne o 0,64 jednotky. Je dôležité poznať súvislosti vo vývoji jednotlivých potravinových komodít. Množstvo rozhodnutí na rôznych úrovniach rozhodovania v jednotlivých krajinách musí byť podporené relevantnými informáciami o cenách najvýznamnejších potravín resp. surovín aby nedochádzalo k problémom vedúcim k obmedzeniu prípadne ohrozeniu jednotlivých ekonomických subjektov.

Keď ceny potravín v roku 2008 vzrástli, unáhlené reakcie, ako napr. zákaz vývozu potravín, priviedli podľa Agentúry Spojených štátov pre medzinárodný rozvoj 100 miliónov ľudí do chudoby. [5]

Preto je nevyhnutné neustále a pravidelne sledovať vývoj cien potravín a ich vzájomné ovplyvňovanie vo svete i v jednotlivých krajinách, a to pravdaže aj z dlhodobého hľadiska. Krajiny by sa mali vyhnúť unáhleným, často politickým rozhodnutiam o zákazoch resp. iných reštrikciách, ktoré by mohli mať vážne dopady na milióny ľudí závislých od dovozu potravín. Namiesto toho je potrebné obrátiť pozornosť na podporu a investovanie do dlhodobej potravinovej bezpečnosti.

Globálne ceny potravín výrazne vzrástli od roku 2000 v porovnaní s relatívnym poklesom cien v priebehu predchádzajúcej dekády. Rozsah narušenia dodávok v kľúčových krajinách produkujúcich potraviny prispel k rastu cien potravín spolu so silným dopytom rozvojových krajín, keď sa zvýšil príjem na jedného obyvateľa a spotrebné správanie sa zmenilo. Stúpajúce ceny komodít tak viedli k vyššej úrovni spotrebiteľských cien v mnohých krajinách.

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## **ARGUABILITY AS A SIGNIFICANT FEATURE OF MANAGERIAL COMMUNICATION**

### **ARGUMENTATÍVNOSŤ AKO VÝZNAMNÁ CHARAKTERISTIKA MANAŽÉRSKEJ KOMUNIKÁCIE**

***Abstract:** Manager work is formed by the complex of social interactions in which the manager must act confidently. Arguability and thus the ability to argue is one of the important characteristics of the manager in the performance of his work. In the article, we focus on communication in managerial practice as one of the important social skills of a manager. The aim is to understand the prediction of the behavior of managers in various situations of managerial practice. The aim of the research was to determine how education, age, level of control, gender, work position and the size of the organization affect the ability to readily argue in discussions which require finding appropriate arguments.*

***Key words:** competence, communication, abilities, arguability*

***Kľúčové slová:** kompetencia, komunikácia, schopnosti, argumentatívnosť*

**JEL:** J5 Labor-Management Relations, Trade Unions, and Collective Bargaining

#### **Introduction**

Communication is the process, which to a very large extent, affects the efficiency of a private and professional life of a person. The original Latin name "communicare" includes not only the communication of information but also sharing it. When it comes to announcing the information, it is a flow of information from the source to the recipient and it is a unilateral provision of information, which has its content and form. Sharing in turn means a common sharing of any activity in mutual contact. Sharing actually expresses how the announcing was experienced. Sharing does not mean reception! [1] DeVito understands interpersonal communication as a process of reception and transmission of verbal and nonverbal signals between two or more persons. [2]

According to this author, a person increases by the interpersonal communication: Ability to present oneself as a confident, reliable and trustworthy man. On the other hand, the communication skills or deficiencies may reveal the negative side of a man.

- Skills to socialize - it is a collaboration with colleagues, relationships with friends and family members as well as the ability to establish lover relationships.
- Ability to conduct interviews and conversations - to the ability of communication for the purpose of obtaining or providing information, effective participation in various meetings, interviews, etc.
- Leadership ability and communication skills in a small group - in this case, interpersonal communication helps to ensure that individual is an effective member of various targeted groups.
- Ability to present – being able to provide information to various groups, being able to influence their opinions, attitudes etc.
- Media literacy - This is the ability to use a variety of media, which we have a daily contact with.

There are following types of communication in social interactions:

- Verbal - information transfer is made through speech between two or more people.
- Nonverbal - participants spontaneously or consciously work with non-verbal means. This includes facial expressions, speech - facial muscles, proxemics - physical distance between people in communication, haptics - tactile contact, posturics - natural language attitudes, gestures - spontaneous movement of the body during communication, appearance and general appearance care
- Paralinguistic - volume, pitch, speed, impression, fluency, intonation, speech errors, accuracy of pronunciation, quality and breakdown.
- Communication actions - this is a concrete manifestation of behavior and action - friendship, enmity, sympathy, antipathy, acceptance, contempt, etc. [3]

Jiřincov described three basic models in the development of communication: [1]

- Linear – speaking and listening take place asymmetrically in this model. It is a model which lacks feedback and interaction and it cannot accept the exchange of views between the two entities.
- Interactional - in this model, while one is speaking, the other is listening and afterwards responding to what was said. Speaking and listening are considered as separate events.
- Transactional - every person in this model operates at the same time as the speaker and listener. Thus, when a person says something he/she also receives information from his/her own communication, and also from the reactions of the audience. This means that we produce communication and we are simultaneously its product.

Communication objectives are diverse. This might be the exchange of information, the need to promote and present own ideas , the effort to confirm or change the relationships between people, resolving disputes and problems, finding common conclusions, or just have fun. [4] Communication objectives also depend on their functions. The aim of the information function is to inform (pass the information, add, announce, declare). The objective of the instructional function is to instruct, teach, guide, and advise. The aim of the persuasive function is to persuade, thus

trying to change the opinion of the recipient. Communication also has an entertaining function with the aim to entertain, cheer up, distract etc. [1]

As it was already mentioned, communication at work and in personal life can be understood as sending and receiving communication between two or more subjects. By announcing we can understand everything what the subject of communication is, as well as verbal and nonverbal facts which have the signal basis. Since the communication requires at least two subjects, communication is primarily a relationship. [5] Managers, while working, experience various social interactions which are based on information and communication competences of a manager. Good communication skills enable managers to deal with conflicts constructively and to coordinate employees' interaction in order to achieve planned objectives. [6]

Top managers are expected to represent and communicate the interest of common goals in a convincing way. Moreover, they are expected to be integrators as well. Nowadays, management team and work of managers is no longer considered to be a separate part of an organization. Managers without social competencies and good communication skills are not able to overcome barriers and cope with demanding situations. In the world of emancipation, the leadership is not about giving commands and instructions, but about persuading, impressing and leading by personal charm, charisma and positive vibration, etc. Therefore, it can be said that social competencies are dependent on the ability to communicate effectively. [7]

It is known that management is a system of knowledge about information communication process. Therefore, managers must know what communication is, how to communicate properly, how to present and express their ideas, etc. Communication seems to be a simple part of managerial work, but the true is that it is very difficult and complex process. There are several insights into the issue, e.g. an insight into communication due to its components, an insight focused on harmonizing of the communicators, insights into communication of different opinions or interests, as well as, insights how communication is divided according to the techniques leading to agreement or refusal. [4]

Researches prove that employees of organizations (at managerial as well as at non-managerial positions) spend 50-90 per cent of their working time communicating. It can be said that communication is crucial for company's performance and for the achievement of its goals and objectives. Therefore, it is important for a manager to communicate clearly and effectively by providing reliable and useful information. The ways and the forms of communication are essential communication skills. The appropriate way of expressing ideas is needed to be used, because it is almost as important as the content of the communication itself. Moreover, the inappropriate form of communication kills and blocks a good idea. [5] According to Khelerová [8] the communication skills consist of:

- Active listening - is important for a manager to impress people by listening to their problems, opinions, attitudes, etc. Active listening means that manager uses verbal or non-verbal expressions in order to stimulate communication and avoids mistakes in active listening such as constant interruption, lack of eye contact, showing no interest, using non-verbal expressions of passivity.
- Questioning techniques – manager needs to know how to ask appropriate question to stimulate communication. Asking questions can influence the whole communication process. Managers can ask open questions requiring extended answers or close questions for speeding up the communication process.
- Non-verbal communication – the process of communication without words which is known as body language. The information are received from mostly visual clues such as kinesics (body moves and gestures), facial mimicry (facial expressions, movements of facial muscles), haptics (touch during communication), oculusics (eye movements, eyebrow movements), posturology (body posture), proxemics (distance during communication) [9]
- Empathy – it is an ability thanks to which a manager is able to sense the other's people emotions for better understanding and recognizing their needs and skills. Empathic managers can adapt their communication to every person and situation.
- Overcoming barriers – it happens that there is a tense atmosphere during the communication process because of an uncomfortable environment or a person. The people are not all the same, therefore, the differences among people can be seen as communication barriers, e.g. age, personal background, culture, education, personal image, etc. Good manager must know to overcome any communication barriers by using some elements of the other person's communication style in order to gain the trust. The general truth is that less barriers in communication can make communication more effective and easier. [8]

Every person gets into a situation of defending their opinion, convincing and influencing others by using arguments in order to achieve the goal. Argumentation is a form of communication used for reaching conclusions by proving, reasoning, persuading, etc. Argumentation itself, as well as the ways of argumentation, is difficult to be learnt, because the key factors needed for argumentation are congenital or acquired subconsciously. Argumentation uses wisdom, logic, emotions, will and morality. Every discussion can be based not only on logical reasoning, but also on logical persuading. [10] The success of individual's communication process depends on:

- Communicator – trustworthiness, behaviour, status, non-verbal behaviour, interest
- Forms of communication – intelligibility, organization of the communication, argumentation figures, etc.
- Content of communication – quality, choice and number of arguments
- Target group – judgment, prejudice, awareness, attitude, personality, etc. [11]

In addition, argumentation can be used for dealing with any problems. In the research, which was focused on group problem – solving in working groups on the basis of sustainable procedures, Frankovský presents that on the basis of sustainable

procedures, the members of the group at higher positions have typical higher level of arguability. [12] In the research, this phenomenon has statistically occurred during the solving real problem situations at the analysis of the duration of the active interventions into group solutions. Furthermore, the opposite polarization is obvious, but not in every case of statistically significant correlation coefficient between tendencies for argumentation/tendencies avoid argumentation and registered characteristics.

Furthermore, in the research, the author is focused on the analysis of the relation between individual members of a group and their position from the point of interventions of the orientation character, opinion, suggestion. The relation between heuristic competence and position of the group members at solving the real problems is significant, which means that there is relation between arguability and the position of the group members at problem-solving. According to the research higher level of arguability and heuristic competence is characteristic for higher positions.

## **Results**

### **Experimental sample description**

In our article we present results of our survey mapping arguability evaluation in managerial communication. Described research was realized on a sample of 217 respondents (managers and employees at non- managerial job positions) The sample had these specifications:

- a) According to gender - 120 men (55%) and 97 women (45%)
- b) According to age - average age for the whole sample is 38,2 years, the youngest respondent was 19 years old, the oldest was 64 years old.
- c) According to achieved level of education - 86 respondents finished secondary school (40%), 74 respondents finished first level of higher education (34%), 50 graduated second level of academic degree (23%) and finally - 7 respondents finished third degree of academic education (3%).
- d) According to job occupation - 20 respondents (9%) worked in top management, 56 respondents (26%) represented middle managerial levels, 32 respondents (15%) worked as operational management and 109 respondents (50%) were performance employees.
- e) According to organization size - 76 respondents (35% of surveyed individuals) worked in companies smaller than 150 employees, 77 respondents (36%) worked in organization that employs 151 - 250 people, 39 respondents (18%) were employed in companies of 251 - 500 work positions, 22 respondents (10%) worked in companies of 501-1000 employees and finally 3 respondents (less than 1%) worked in company that employs more than 1001 employees.
- f) According to job position - 108 respondents (50%) were at the managerial positions while 109 respondents were not at the managerial positions.

## Method

Data used in our research were acquired through method aimed on arguability evaluating known as arguability scale. Authors of this methodic are D.A. Infante and A. S. Rancer. [13] The self-evaluated scale is divided into sheet of 20 items. These items are tracking arguability as a psychological quality - a marker composed of tendency for making arguments and the tendency to avoid situations where such persuasive influence is needed. The final argumentation score, is therefore, presented as distinction between these two tendencies. Overall score also describes "argumentation" as stable feature of psyche which predisposes the subject (in the problem-solving situations) to vindicate own opinions during communication (higher score), or casting away (avoiding) unpleasant social situation typically accompanied by negative feelings connected to the necessary act of argumentation (lower score). Another research showed a significant relationship between arguability (as a mental feature) and success in problem-solving situations inquired through "Problem-solving survey" [14] Authors Infante and Rancer and some other foreign literature also use the term "Argumentativeness" in the same context. [13]

### Differences between managers in arguability evaluation according to manager's education.

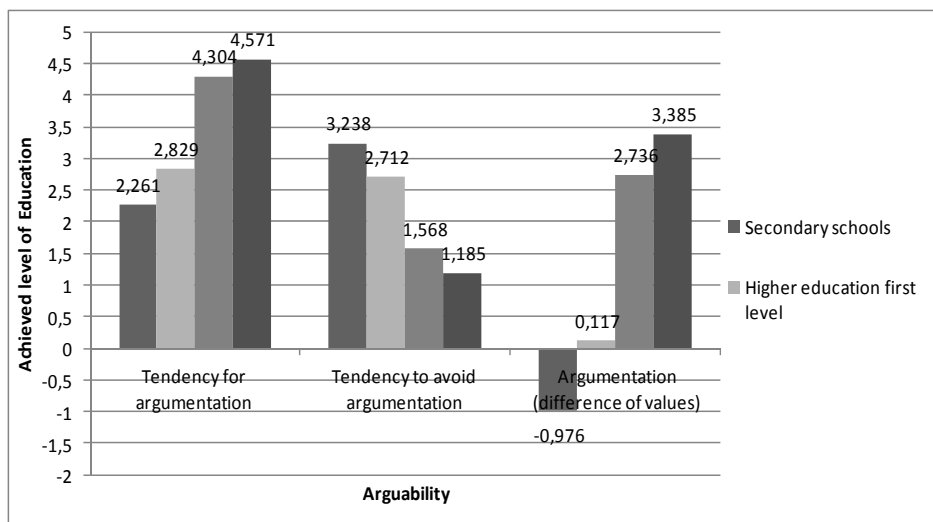
The research was used as a verification of the existence of differences in arguability according to subject's education, as well. Scored results of our mathematic-statistical analysis, performed by ANOVA method, are presented in the following table and diagram.

Table 1 Differences among managers - evaluation of arguability according to manager's education.

Education	Tendency for argumentation	Tendency to avoid argumentation	Argumentation
Secondary school	2,261	3,238	-0,976
Higher education – first level	2,829	2,712	0,117
Higher education - second level	4,304	1,568	2,736
Higher education – third level	4,571	1,185	3,385
F - test	121,096	81,246	108,974
Sig.	0,000	0,000	0,000

Source: own data collection and analysis

Figure 1 Differences among argumentation - evaluation according to manager's education.



Source: own data collection and analysis

Statistically significant differences in all three factors were tracked during validation of the assumption, that there are differences in arguability according to education. The highest score in positive tendency for making arguments was achieved by managers with second and third level of higher education. It is most likely because that these controlling workers like to discuss, they do not avoid exchanging of views, graduates hardly miss the boat when it comes to polemics and they find reasoning a stirring opportunity. On the other hand, managers with accomplished secondary education and the first level of higher education rarely feel comfortably in discussions. In this category we often found people, who do not seek out debates about controversial questions and do not feel comfortably joining a discussion in a short time. The highest score in the tendency to avoid exchanging of opinions was achieved by managers with secondary education. It is very possible, that these people have fears of discussions. Dynamic argumentation makes them feel uncomfortable - they are not able to find the right arguments very often, so they rather do not join a discussion.

On the contrary - managers with accomplished second and third level of higher education hardly feel fears and uncertainty because of discussion and they almost never avoid reasoning. The total arguability score, which is a result of distinction between positive and negative tendency to argumentation, shows that different scoring results can be achieved by different education level. The findings show that - in our tested sample, both male managers and female managers with different education reached positive score. In addition, the highest score was achieved by managers with third level of education. The lowest score have managers with secondary education.



## Relations between age of managers and arguability evaluation.

We verified the assumption, that there is a relation between age and arguability evaluation Overall score is shown in following tab.

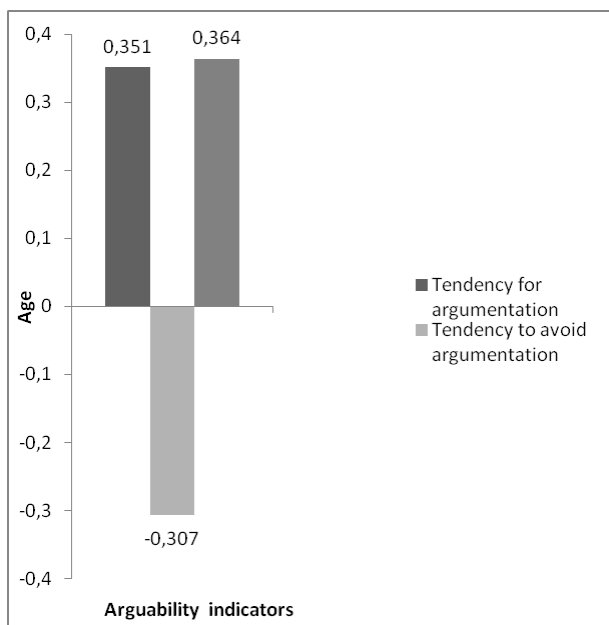
Table 2 Relation between age and arguability evaluation.

Variables	Tendency for argumentation	Tendency to avoid argumentation	Argumentation
age	0,351**	-0,307**	0,364**

\*\* statistical significance level: 0,01

Source: own data collection and analysis

Figure 2 Projection of relation between age and arguability evaluation.



Source: own data collection and analysis

Several statistical relations were discovered during verification. The results reported that older managers scored higher in tendency to argumentation and showed less tendency to avoid exchanging of views. Older managers seem to have no problem with argumentaion, enjoy argumentation, feel comfortable, moreover, they take it as a exciting mental competition. The total score of arguability, as a result of the difference between positive and negative tendency to argumentation, suggested that the tendency for argumentation rises with age.

### Difference between arguability evaluation among managers and employees at non-managerial positions).

In our research, it was assumed that there is a difference between arguability evaluation among managers and employees at non-managerial positions).

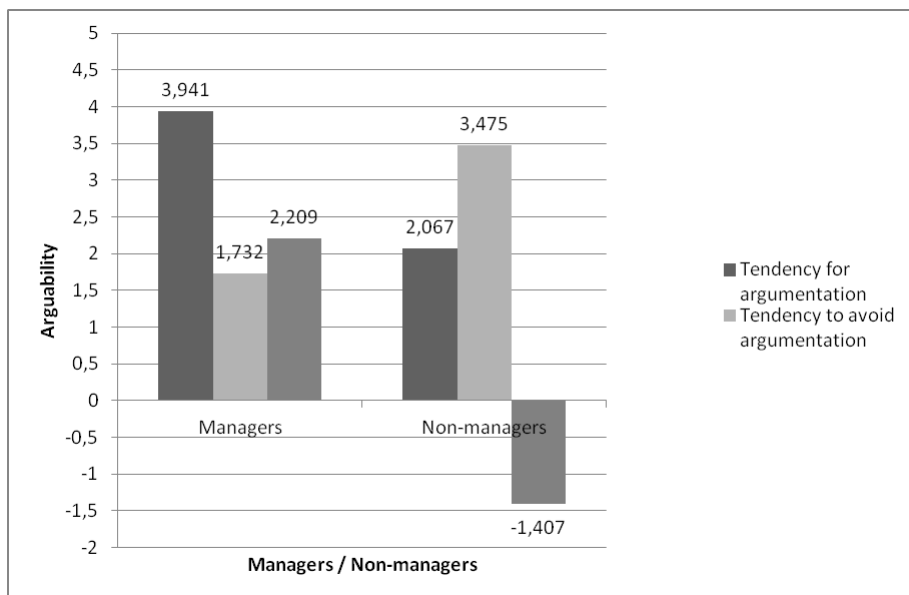
Research interpretation was statistically performed via T-test. Results are presented as follows:

Table 3 Differences in argumentation evaluation among managers and employees at non-managerial job positions.

Variables	Tendency for argumentation	Tendency to avoid argumentation	Argumentation
Managers	3,941	1,732	2,209
Non-managers	2,067	3,475	-1,407
T - test	28,733	35,170	35,211
Sig.	0,000	0,000	0,000

Source: own data collection and analysis

Figure 3 Differences in arguability evaluation among managers and employees at non-managerial job positions.



Source: own data collection and analysis

The research results showed that managers score higher in tendency to argumentation than employees working at non-managerial positions. It can be said that managers proved that they do not avoid argumentation, enjoy controversial questions, are able to give an argument promptly, etc. The evaluation of the tendency to avoid argumentation indicates that employees at non-managerial position scored higher than managers. It can be explained by their feeling of uncertainty, uncomfortability when it comes to their participation in discussion. From the point of the total score of arguability, it is obvious, that managers got positive results (as we mentioned above) – they enjoy discussions, they look for opportunities to enter a debate, they usually persuade others with their argumentation. On the other hand, non-managers had lower score, therefore, it can be said that the situations that require argumentation are considered to be a problematic area.

### **Gender differencies in arguability evaluation.**

It was assumed that there are gender differences in arguability evaluation.

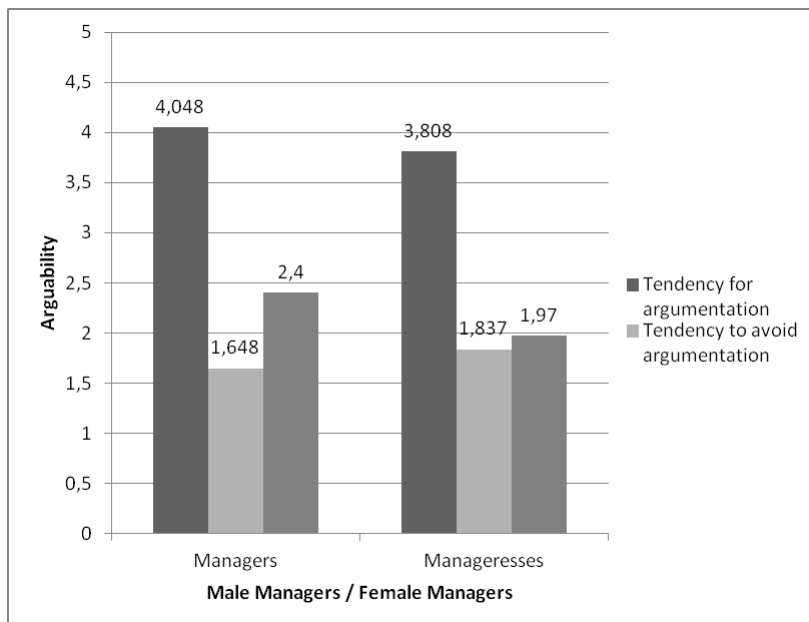
Research interpretation was statistically done via T-test. Results are presented in following table:

Table 4 Gender distinction in arguability evaluation.

<b>Gender</b>	<b>Tendency for argumentation</b>	<b>Tendency to avoid argumentation</b>	<b>Argumentation</b>
<b>Male Managers</b>	4,048	1,648	2,400
<b>Female Managers</b>	3,808	1,837	1,970
<b>T - test</b>	1,960	2,199	2,253
<b>Sig.</b>	0,050	0,029	0,026

Source: own data collection and analysis

Figure 4 Gender differences in arguability evaluation



Source: own data collection and analysis

There were statistically significant gender differences in arguability. Female managers scored higher in the factor of avoiding argumentation, which means that women tend to feel more uncomfortable, nervous after the discussion. It can be said that they are even glad about not starting a discussion at all. However, it is necessary to point out that both genders rarely use the option to reject argumentation and the main difference is only in the rate of rejection of the tendency to avoid argumentation. Overall score in arguability, which presents the result of the difference between positive and negative tendency to argumentation, shows that male and female managers had positive score. Both genders enjoy discussions, justify their opinions, do not avoid questionable topics, etc. However, results show that male managers are more promptly in responding and more confident than women in discussions.

#### **Differences in arguability evaluation among various managerial levels.**

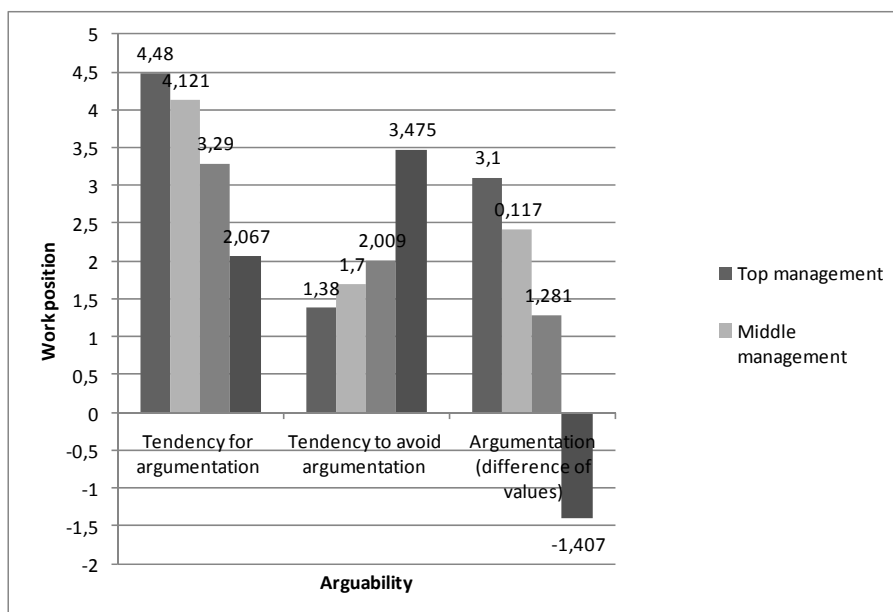
We tried to verify the assumption that there are differences in arguability among various work positions.

Table 5 Arguability evaluation differences according to work position.

Manager level	Tendency for argumentation	Tendency to avoid argumentation	Argumentation
Top management	4,480	1,380	3,100
Middle management	4,121	1,700	2,421
Operational management	3,290	2,009	1,281
Performance employees	2,067	3,475	-1,407
F - test	528,518	509,847	695,762
Sig.	0,000	0,000	0,000

Source: own data collection and analysis

Figure 5 Arguability evaluation differences according to work position projected into visualized form.



Source: own data collection and analysis

There are several statistically significant differences in arguability evaluation according to work position. Top management had the highest scores, which means that they are communicative, they seek for discussions, for possibilities for discussions and argumentation. On the other hand, performance employees rarely look for discussions and argumentation as they scored high in tendency to avoid argumentation. The total score of arguability showed that the highest score was reached by managers of top management. In addition, the lowest score had

performance employees described as individuals with fears of discussions and argumentation.

### Differences in arguability evaluation according to organization size.

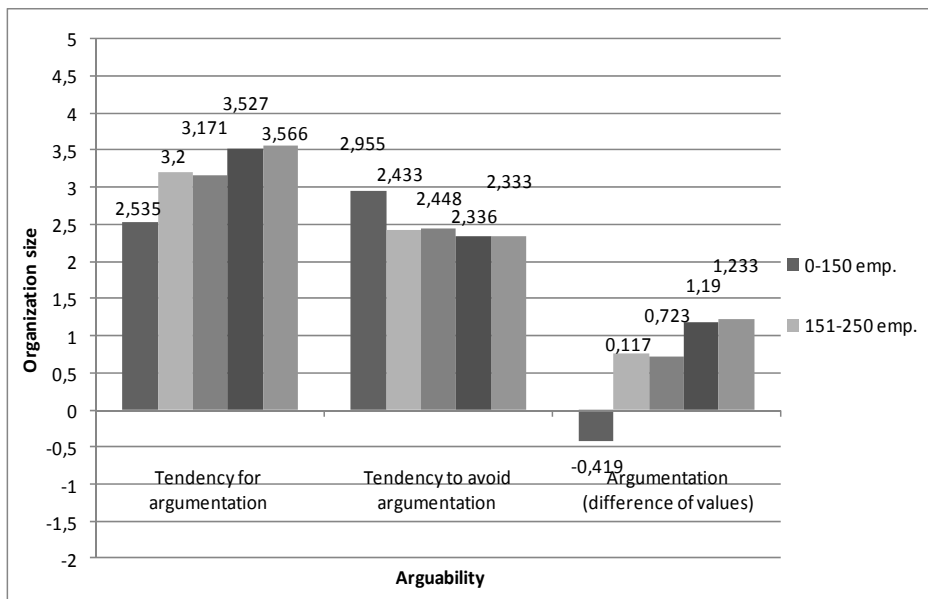
It was assumed that there are differences in managerial arguability according to organization size. The results of data analysis are presented in table 6.

Table 6 Differences in arguability among managers according to organization size

Organization size	Tendency for argumentation	Tendency to argumentation	Argumentation
0-150 employees	2,535	2,955	-0,419
151 - 250 employees	3,200	2,433	0,766
251 - 500 employees	3,171	2,448	0,723
501 - 1000 employees	3,527	2,336	1,190
1001 and more employees	3,566	2,333	1,233
F - test	6,914	4,244	5,735
Sig.	0,000	0,002	0,000

Source: own data collection and analysis

Figure 6 Differences in managerial differences according to organization size



Source: own data collection and analysis

There are statistically significant differences in managerial arguability according to organization size in all three factors. The highest score was reached by managers in companies which size is over 500 employees or 1000 employees. The results showed that managers enjoy discussions, are able to use argumentation promptly and consider discussion and argumentation to be exciting. The opposite scores were measured in tendency to avoid argumentation. The managers in companies, which size is 150 employees and less, scored highest. These managers sometimes got problems with discussions and argumentation, with justifying opinions in tense situations. Overall score in arguability showed that the highest scores were reached by managers in companies over 500 employees or over 1000 employees. It can be explained by the fact that in big companies, managers have to communicate a lot, therefore, the managers have many communication skills. The lowest score was measured among managers in companies with the number of employees less than 150. They are afraid of discussions and try to avoid them.

## **Conclusion**

The results of the research confirm that there are differences in managerial arguability according to education, age, managerial position, work position, gender and organization size.

It can be said that education provides more information about communication possibilities and communication steps, extend vocabulary, in other words, creates the basis for effective communication. The research results present that there are differences in managerial arguability according to age. It can be said that the tendency for argumentation rises by age. In addition, high scores were reached by managers in the tendency for argumentation among employees at managerial and non-managerial positions; on the other hand, non-managers scored high in tendency to avoid argumentation. Moreover, there are gender differences among managers. Overall score in arguability, which presents the result of the difference between positive and negative tendency to argumentation, shows that male and female managers had positive score. Both genders enjoy discussions, justify their opinions, do not avoid questionable topics. Although man scored higher in tendency for argumentation, it is necessary to point out, that the difference was only in the rate of rejection of the tendency to avoid argumentation. Concerning job position, the highest score in tendency for argumentation was achieved by top managers and the lowest score was achieved by performance employees. Furthermore, there were significant differences in arguability according to organization, as well. As it was outlined, the employees working in bigger companies achieved the highest scores in the tendency for argumentation.

## **Súhrn**

Výsledky výskumu poukazujú na to, že existujú rozdiely v posúdení argumentatívnosti z hľadiska vzdelania, veku, riadiacej funkcie, pracovného zaradenia, pohlavia a veľkosti organizácie. Môžeme teda konštatovať, že vzdelanie poskytuje ľuďom viac informácií o možnostiach a postupoch komunikácie, rozširuje slovnú zásobu teda utvára predpoklady efektívnej komunikácie. Nakoľko so

stúpajúcim vzdelaním stúpa aj tendencia argumentovať. Z prezentovaných výsledkov je zrejmé, existujú súvislosti medzi vekom manažérov a posúdením argumentatívnosti, nakoľko sme dospeli k záverom, že s vekom rastie tendencia argumentovať. Medzi manažérmi a nemanadžérmi sme zistili, že vysoké hodnoty v tendencii argumentovať dosahujú práve manažéri a vysoké hodnoty v tendencii vyhýbať sa argumentácii boli zistené zas u nemanadžérov. Pri zisťovaní rozdielov z hľadiska pohlavia sme dospeli k záverom, že manažéri a manažérky dosiahli pozitívne skóre, t.j. ako sme už uviedli radi diskutujú, diskusie o sporných otázkach im zbystrujú myslenie, radi bránia svoje názory v sporných situáciách, atď. Z výsledkov je zrejmé že muži manažéri sú v argumentácii pohotovejší a istejší nakoľko dosiahli vyššie skóre ako ženy manažérky. Je potrebné ale upozorniť, že rozdiel je najmä v miere odmietania tendencie vyhnúť sa argumentácii. Čo sa týka pracovného zaradenia, tak najvyššie skóre v tendencii argumentovať dosiahli zamestnanci vrcholového manažmentu a najnižšie skóre zas výkonní pracovníci. Aj veľkosť organizácie nám potvrdila významné rozdiely, nakoľko sme zistili, že s veľkosťou organizácie rastie aj tendencia argumentovať, teda pracovníci pracujúci vo veľkých spoločnostiach dosahovali najvyššie skóre v tendencii argumentovať.

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