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Obsah

Contents

ECONOMICS AND ECONOMY

LIBERALIZATION AS A CONDITION OF REDUCING CONCENTRATION OF NATURAL GAS SECTOR IN THE SLOVAK REPUBLIC	6
<i>Alena BAŠOVÁ</i>	

EMPLOYMENT AND UNEMPLOYMENT DEVELOPMENTS IN SLOVAKIA AND CZECH REPUBLIC	18
<i>Dagmar PETRUŠOVÁ, Katarína KRÁĽOVÁ, Jana SOCHULÁKOVÁ</i>	

SOCIAL ASPECTS OF MANAGEMENT

THE STATE SOCIAL SUPPORT INSTRUMENT TOOLS WITHIN THE LIFE OF A MIGRANT	27
<i>Tatiana MASÁROVÁ</i>	

GLOBALLY APPLIED FREE LABOUR MOVEMENT MANAGEMENT IN TERMS OF CONTEMPORARY MIGRATION PROBLEMS.....	32
<i>Darina SAXUNOVÁ</i>	

EVALUATION OF ECONOMIC BENEFITS FROM MIGRATED IN V4 COUNTRIES	41
<i>Magdaléna TUPÁ</i>	

HUMAN RESOURCES AND PERSONNEL MANAGEMENT

LEADERSHIP THEORIES AND COMPETENCIES IN PROPERTY VALUATION SECTOR	48
<i>Rusnė JEGELAVIČIŪTĖ, Mykolas NAVICKAS, Valentinas NAVICKAS</i>	

THE PROTECTION OF PERSONAL DATA IN THE CONTEXT OF THE NEW SLOVAK LEGAL ACT.....	56
<i>Daniela NOVÁČKOVÁ</i>	

PROBLEMS OF FLEXIBILITY OF WORKING HOURS IN GERMANY AND AUSTRIA	63
<i>Jarmila WEFERSOVÁ</i>	

SOCIAL CONTEXT OF THE ECONOMY, LABOR MARKET AND HUMAN RESOURCES DEVELOPMENT

BASIC THEORIES OF MOTIVATION IN SLOVAC POLICE FORCE AND THEIR APPLICATION IN PRACTICE.....	71
<i>Marcel ĎURIŠ, Richard HELIGMAN, Ľubomíra STRÁŽOVSKÁ</i>	

MOTIVATION OF PUBLIC SECTOR EMPLOYEES 79

Jozef HABÁNIK, Adriana MARTOŠOVÁ, Monika GULLEROVÁ

**THE MOTIVATION OF SMALL AND MEDIUM ENTERPRISES TOWARDS
CLUSTER COOPERATION IN THE CONTEXT OF HUMAN RESOURCES 86**

Katarína HAVIERNIKOVÁ, Monika MYNARZOVÁ

**CHANGING LABOUR MARKET IN THE SLOVAK REPUBLIC IN THE CONTEXT
OF POPULATION AGEING..... 94**

Katarína ŠKROVÁNKOVÁ, Eva GRMANOVÁ

PUBLIC ECONOMICS AND PUBLIC ADMINISTRATION, REGIONAL DEVELOPMENT

**HISTORICAL, SOCIOLOGICAL AND JURIDICAL ANALYSIS OF TRAINING OF
LOCAL GOVERNMENT EMPLOYEES IN CZECH AND SLOVAK REPUBLIC..... 103**

Frédéric DELANEUVILLE

**THE EFFECT OF THE EXISTENCE OF CLUSTERS ON REDUCING REGIONAL
DISPARITIES IN THE SLOVAK REPUBLIC 110**

Dana JAŠKOVÁ

PSYCHOLOGY OF MANAGEMENT

FATIGUE AS A CONSEQUENCE OF SHIFT WORK AND EXHAUSTION 118

Eva ŽIVČICOVÁ

LIBERALIZATION AS A CONDITION REDUCING CONCENTRATION OF NATURAL GAS SECTOR IN THE SLOVAK REPUBLIC

Alena BAŠOVÁ

Abstract

Currently, changes in European energy policy priorities and policies have brought many challenges. It is necessary to solve especially the changes in the global climate, ever-decreasing oil and gas reserves and the rapid rise of energy prices, reduced energy safety. The aim of this contribution is to point out the positive effects of the liberalization of the energy market in Slovakia. Therefore, we will analyze the timing of the creation of a single gas energy market in the household sector. We have used the Herfindahl-Hirschmann index, switching to reflect the relationship between the concentration rate and the number of companies, which are operating on market. To achieve this goal, we have used a variety of methods, from collecting information, especially from scientific works from both, foreign and home authors. From the scientific methods we used mainly coupled methods of induction and deduction, analysis and synthesis and to better illustrate of the results obtained, we used graphical and mathematical methods, which are mainly used for the clear presentation of our results in tables and charts.

Key words

gas market, liberalization, single energy market, competition, Herfindahl-Hirschmann index, switching, household sector.

JEL Classification: D4, O12, O16

Introduction

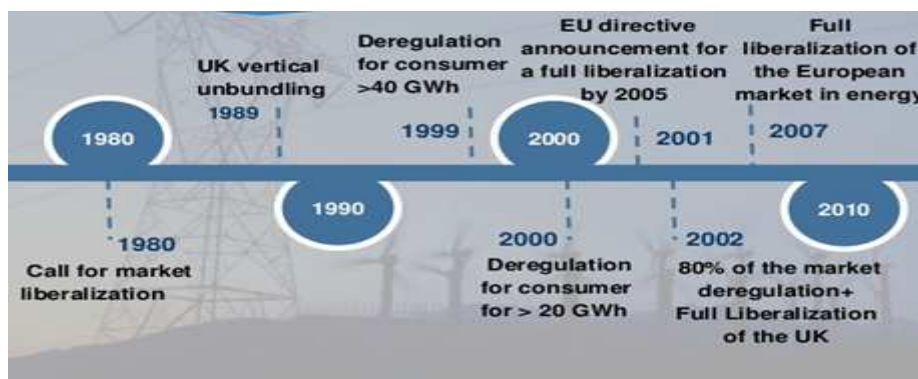
The beginnings of the creation of a single energy market in the European Union date back to May 9, 1950 when French Minister for Foreign Affairs Robert Schuman presented a plan for closer co-operation between six Western European countries. Currently, changes in European energy policy priorities and policies have brought many challenges. It is necessary to solve especially the changes in the global climate, ever-decreasing oil and gas reserves and the rapid rise of energy prices, reduced energy safety. (Yergin, D-Hillenbrand, 1982) The consequences are interruptions of energy supplies, increasing level of dependence on imports from third countries. In Slovakia from 1 January the new regulatory policy began to apply and for unifying all

conditions for comparison, the year 2017 will not be included in the calculations.

1. Energy packets as a condition for implementation of liberalisation natural gas sector

First „package“ of energy liberalization was oriented on the ownership of new generation, but was introduced only accounting and functional unbundling. Each state should create the independent authority to solve discrepancies of the market (independent regulator). In this period the liberalization was introduced only for big customers.

This first package was adopted in EU in 1996 in electricity sector, and two years later – 1998, was adopted first package in natural gas sector. (Baldwin, Richard, 2008)

Figure 1. Liberalization of energy sector

Source: own processing by <https://www.siea.sk/materials/files.com>

The second wave of liberalization of energy market was adopted by Directive 2003/55/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal energy market of natural gas. The experience gained in implementing this Directive shows the benefits, that the internal energy market can bring in terms of higher efficiency, lower prices, higher level of services and increased competitiveness. (Lesser, Jonathan A. - Giacchino, 2009). However, the significant shortcomings remain and the

possibilities for improving the functioning of the market remains, in particular measures are needed to ensure the same conditions in manufacturing and to reduce the abuse of the dominant position and the ruthless behavior of monopolies. (Morthorst, Wehnert, 2015). The aims of 2-nd package mainly were: of increasing efficiency, price reductions, higher standards of service and increasing competitiveness. Execution of legal unbundling should be implemented not later than 7. júla.2007. (Laughton, 2003)

Figure 3. Gaps in the second package

Source: own processing by <http://eur-lex.europa.eu>

The third energy package has strengthened the current position of consumers on the market. (Lesser, Jonathan A. - Giacchino, L. R.:2009). The Directive determines that when the consumer asks for a change of energy supplier, this change should be made by the concerned network operator within three days of the submission of the application. Consumers also have the right to receive complete information about their consumption. The directives strengthen the powers of the national regulatory authority in the areas of competition and consumer protection, through the establishment of an Independent Transmission

Operator (hereinafter ITO) model. (Kraus, M.: (2012) *Liberalised Energy Markets — Do We Need Re-Regulation?*). At the same time, The Agency for the Cooperation of Energy Regulators (hereinafter ACER) was established. The latest round of EU energy market legislation, known as the third energy package, has been adopted to improve the functioning of the internal energy market and resolve structural problems. It covers five main areas. (Directive 2009/73). Short recapitulation of process liberalisation in energy sector in EU shows next picture.

Picture 4. Third liberalization package in EU

Source: own processing by Hunt, 2012

2. Impact of liberalisation on reducing concentration

In the following part of the paper we will point out the direct impact of the liberalization of the energy sector in the Slovak economy through the Herfindahl-Hirschman index (hereinafter HHI). HHI is known as the Herfindahl-Hirschman Index, and is named after economists Orris C. Herfindahl and Albert O. Hirschman. (Hirschman, 1964) HHI is used in developed countries to measure the level of concentration of the national economy. Vertically integrated monopoly companies operating in the energy sector have been abusing their dominant position on the market. (Train, 2001). Implementation of the liberalization package adopted by the European Community was gradually reduced the degree of concentration in the SR. The Herfindahl-Hirschman Index (hereinafter HHI) is a common measure of market concentration of the sector that is used to determine market competitiveness. We can say that mergers and acquisitions usually caused increasing HHI, but the restructuring of sector, like liberalisation usually caused decrease HHI. It is calculated by squaring the market share of each firm operating in a market and then summing the resulting numbers. The Herfindahl Index (H) ranges from $1/N$ to one, where N is the number of firms in the market. The HHI is expressed as:

$$HHI = s_1^2 + s_2^2 + s_3^2 + \dots + s_n^2 = H = \sum s_i^2 \quad (1)$$

where s is the market share of each firm expressed as a whole number, not as decimal and n is number of companies in sector. (Warren-Boulton, 1990).

For example, if there was only one company on the market with a 100% share, the HHI index would have a value of 10,000 (100^2). For example, if there was

only one company on the market with a 100% share, the HHI index would have a value of 10,000 (100^2). Conversely, if there were 1,000 companies on the market, with market shares close to zero ($1/1000$), then the market would be close to perfect competition and should be close to zero $0,000001000$ ($(1/1000)^2$). The U.S. Department of Justice considers a market with result of HHI of less than 1,500 to be a competitive market, an HHI of 1,500 to 2,500 to be a moderately concentrated market. (Hunt, 2012).

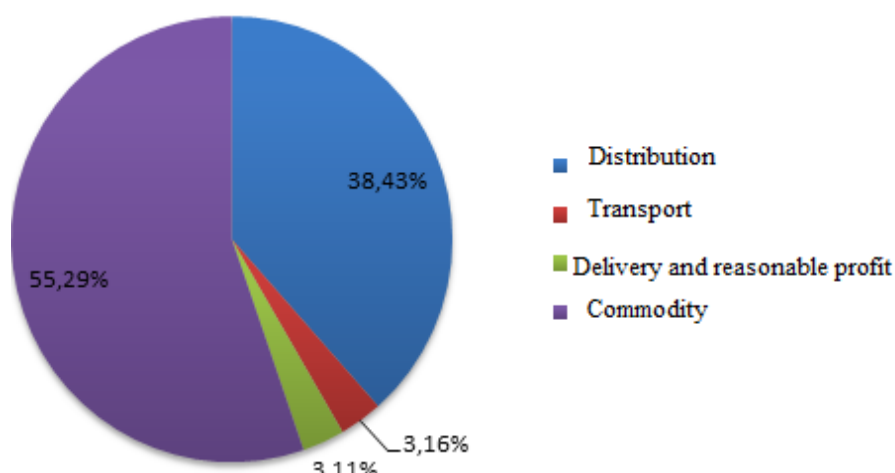
3. Analyzis of natural gas sector in Slovakia

Slovakia has to import about 98% of its natural gas consumption, mainly from Russia, which comes either through a traditional transit route through Ukraine, or is bought in Germany or the Czech Republic where it flows through the Nord Stream gas pipeline. In the Slovak gas market operate 17 stable suppliers, but according to last report of the Regulatory Office for Network Industries (hereinafter RONI) is five. They are delivering the most important the volume of gas supplied, the Slovak gas industry, a.s. (hereinafter SPP), Innogy Slovakia, s. r. o., ZSE Energy, a. s., and Slovakia Energia, a. s., ELGAS, s. r. o. The market price of natural gas is influenced by several factors, as are the development of oil prices and ratio the Eur / USD exchange rate, because oil and oil products are traded on the international market in US dollars (USD). The market price has only about 30% influence on price setting for regulated entities in Slovakia, the remaining 70% is from the long-term SPP contracts with the Russian Gazprom. (website Enviroportal, 2014). The most important factor in choosing a gas supplier is the price. The final gas price consists of the commodity price, the price for the transportation, distribution and storage of natural gas. The price includes „reasonable“ profit for the gas supplier. The gas price consists of a fixed and variable component. (website Finance, 2015). Fixed rate

represents monthly payment per delivery point (€/month), while the variable rate represents the price for gas consumed (€/kWh). Natural gas price is in the household and in small business category regulated by the Regulatory Office for Network Industries (hereinafter RONI). Maximum gas prices have fallen slightly since 2013. The final price is determined by the sum of the purchase price of gas, from long-term contracts with Russia's Gasprom, representing 70%

and the gas price published by the EEX (European Energy Exchange), which forms in the formula with 30%. Share of commodity on final prices is about 55% for households. More than a third of the price is for distribution, and about 3% is for transport and reasonable "profit" for supplier. Structure of the price for the year 2016 is shown in the following chart. (websiteRONI 2016)

Chart 1. Structure of the average price for gas supply to households in 2016



Source: Annual Report of RONI for 2016

From 1 January 2017, RONI a new decree applies for gas supply to the household sector. The new Decree unified the method of setting prices for the supply of gas to households, with up to 2017 four tariffs, namely D1 to D4, with D4 was not regulated. From 2017, households are divided up to 8 tariffs from D1 to D8, according to their consumption, but only D1 till D6 are regulated. Analyze of natural gas sector we focused only for the years 2009 to 2016, because from 1 January the new regulatory policy began to apply and due to unifying all conditions for comparison, so the year 2017 will not be included in the calculations.

4. Practical application HHI in SR

2009 was a turning point for the gas market due to the began of market liberalization and therefore, the market started to open. A significant impact had the Russian-Ukrainian crisis, which, due to the almost 100% Slovak dependence on Russian gas, caused gas supplies to Slovakia to stop. For ensure deliveries for households the reverse flow through transport network was started to operate. During this period, natural gas from slovakian storage was also supplied outside Slovakia, thereby reducing the security of gas supplies to our country. This year the dominant supplier was SPP and its market share was about 90% of the total number of suppliers. Finding a shares of alternative suppliers with a share of less than 5% was not possible and so the sum of all other suppliers is one group of "Other" of 10%.

Table 1. Market shares of gas companies in 2009

Suppliers	Market share(%)
SPP	90
Other (2subjects)	10

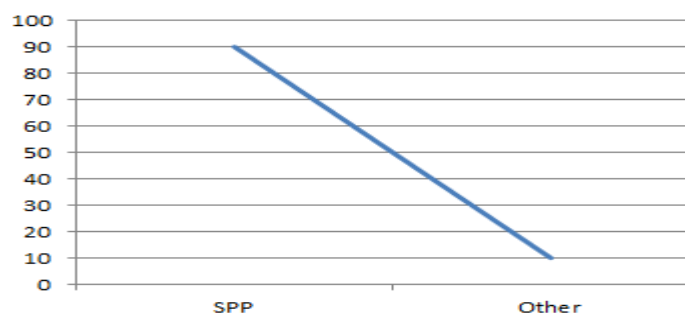
Source: Own processing according annual report of RONI

$$\text{HHI (2009)} = 0,90^2 + 0,10^2 = 0,82$$

(2)

According to HHI criteria, if the market share of the SPP is 90%, it is clear, that this market was almost monopoly in 2009 and therefore the HHI index determined as a highly concentrated sector.

Chart 2. HHI 2009



Source: own processing according to the table above

In year 2010 competition had entered to the households sector, too. First alternative supplier was RWE Gas Slovakia (hereinafter RWE), with share of 13,10%. New suppliers have chosen only the

industrial companies. In the category of household was not competition in this period, and the traditional supplier of the gas SPP dominated almost all of the market.

Table 3. Market shares of gas companies in 2010

Suppliers	Market share(%)
SPP	84
RWE	13,10
Other	2

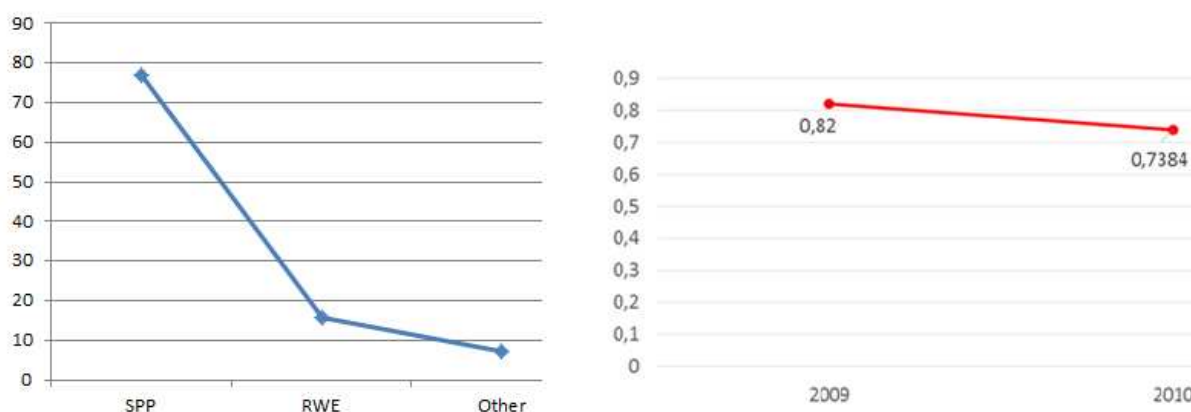
Source: Own processing according annual report of RONI

$$\text{HHI(2010)} = 0,849^2 + 0,131^2 + 0,02^2 = 0,738$$

(3)

The HHI index for this year is 0.738, which is lower than in 2009, but the market is still very concentrated, as shows next chart.

Chart 3. HHI 2010 and Development of HHI 2009- 2010



Source: own processing according to the table above

The change occurred in 2011, in which the liberalization of the Slovak gas market was considerably strengthened and competition in gas supply also increased to all groups of customers and thus to households, too. Households had since 1.7. 2007 opportunity to choose its supplier and it was used more than 21,000 households. This year

households started to supply mainly SPP, ČEZ Slovakia, RWE Gas Slovakia and Magna E.A. Altogether 18 alternative gas suppliers and the share of SPP has decreased to 77.1%, RWE Gas Slovensko improved to 15.6% and share of the other competitors were 7.3%.

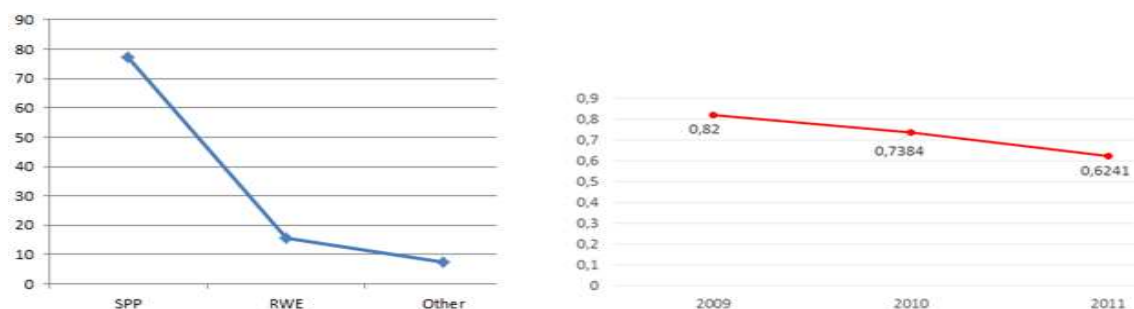
Table 4: Market shares of gas companies in 2011

Suppliers	Market share(%)
SPP	77,1
RWE	15,6
Other	7,3

Source: Own processing according annual report of RONI

$$HHI (2011) = 0,771^2 + 0,156^2 + 0,073^2 = 0,6241 \quad (4)$$

Chart 4. HHI 2011 and development of HHI



Source: own processing according to the table above

In 2012 there a significantly competition was increased, there were 25 gas suppliers and more than 140 companies owned a license to sell gas. The share of SPP's fell to 70%, and the share of RWE was accounted for 18.7%, company Elgas had 2.7% and the other companies (Energetické centrum, Vaša energia, Slovakia Energy, Energie2, ZSE Energia, Stredoslovenská energetika, Lama Energy) covered 11.3% of the market. The result was an increase in changes in the choice of gas suppliers, which was used by over 131,000 households. It was the biggest number of changes in whole period of liberalization.

In this year, the dominant gas supplier in an effort to expand its portfolio of services, has also begun to offer electricity sales. This year, the liberalisation was continued and of the 3rd Liberalization Package was implement to slovak legal framework. The Government of the Slovak Republic approved the method of segregation of the transmission network from the supplier of the SPP according to the ITO model in accordance with § 50 of Act no. 251/2012 Coll. About Energy, allowing eustream, a.s. be part of the vertically integrated company of the SPP.

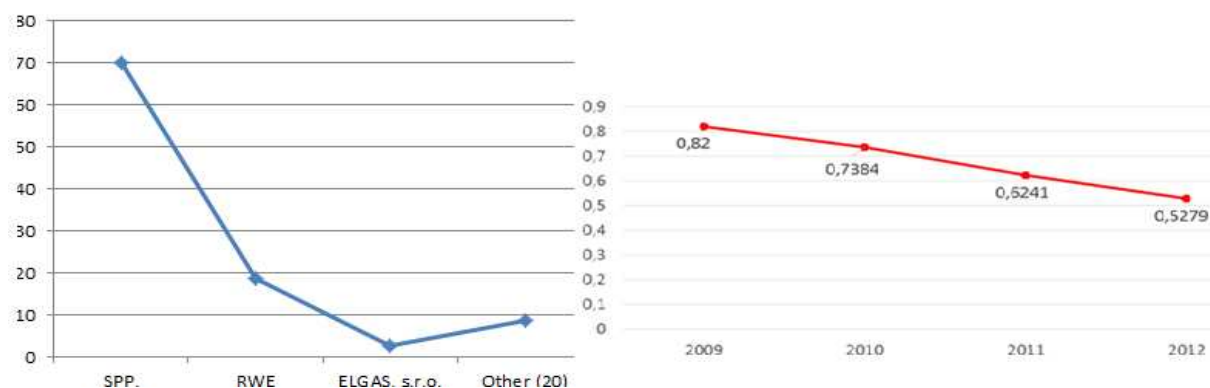
Table 5. Market shares of gas companies in 2012

Suppliers	Market share (%)
SPP.	70
RWE	18,7
ELGAS, s.r.o.	2,7
Other (20)	8,6

Source: Own processing according annual report of RONI

$$HHI(2012) = 0,70^2 + 0,187^2 + 0,027^2 + 0,086^2 = 0,5279 \quad (5)$$

Chart 5. HHI 2012 and development HHI



Source: own processing according to the table above

In 2013 the largest share of the total amount of the delivered gas of 63.2% had SPP, RWE Gas Slovakia reached 18.7%, ELGAS improved to 4% and the other 23 companies secured the remaining 14.1% of gas

consumption. This year there was a saturation of the market by competing gas suppliers, which resulted in a decrease in the number of changes to switching supplier for 88,000 households.

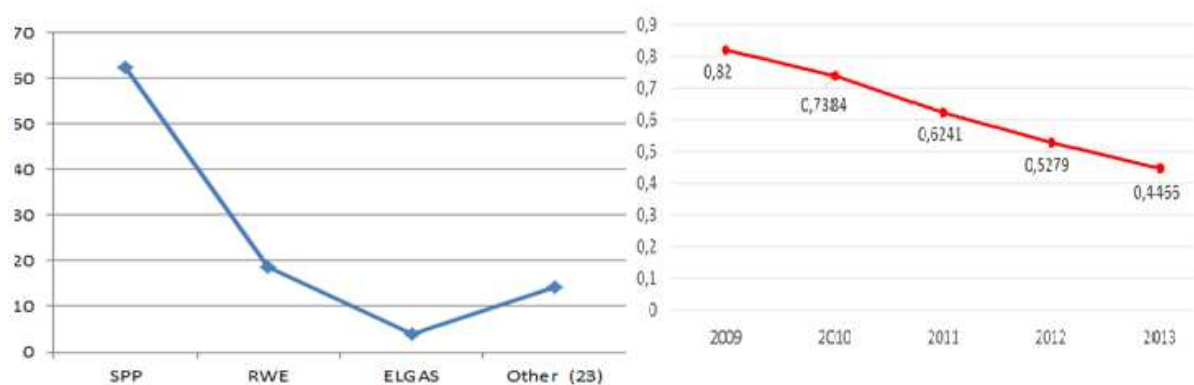
Table 6. Market shares of gas companies in 2013

Suppliers	Market share(%)
SPP	62,3
RWE	18,7
ELGAS	4
Other (23)	14,1

Source: Own processing according annual report of RONI

$$HHI(2013) = 0,632^2 + 0,187^2 + 0,04^2 + 0,141^2 = 0,456 \quad (6)$$

Chart 6. HHI 2013 and development HHI



Source: own processing according to the table above

In 2014, there was a significant fall of natural gas consumption due to the increased interest of consumers in alternative fuels and thermal insulation of buildings, state support for renewable sources, which was in line with the European Union's policy (hereinafter EU). (Mc Corvick, J.: 2014) Gas demand was also influenced by the change of weather during the warm winter and on the energy exchanges dropped gas prices, due to warm winters and mainly excess gas offer over demand on spot gas market. The gas market may be considered stable this year, with no

significant changes in the gas suppliers' structure. Stability of gas supplies was been disturbed by tense relations between the Russian Federation and Ukraine. On the basis of a joint memorandum between eustream and Ukrainian operator Ukrtransgaz a new Slovak-Ukrainian connection was built as well as a new entry-exit point in Budince. The gas pipeline has been operational since September 2014, which strengthening energy security of Ukraine and diversification of Ukraine's energy gas resources.

Table 7. Market shares of gas companies in 2014

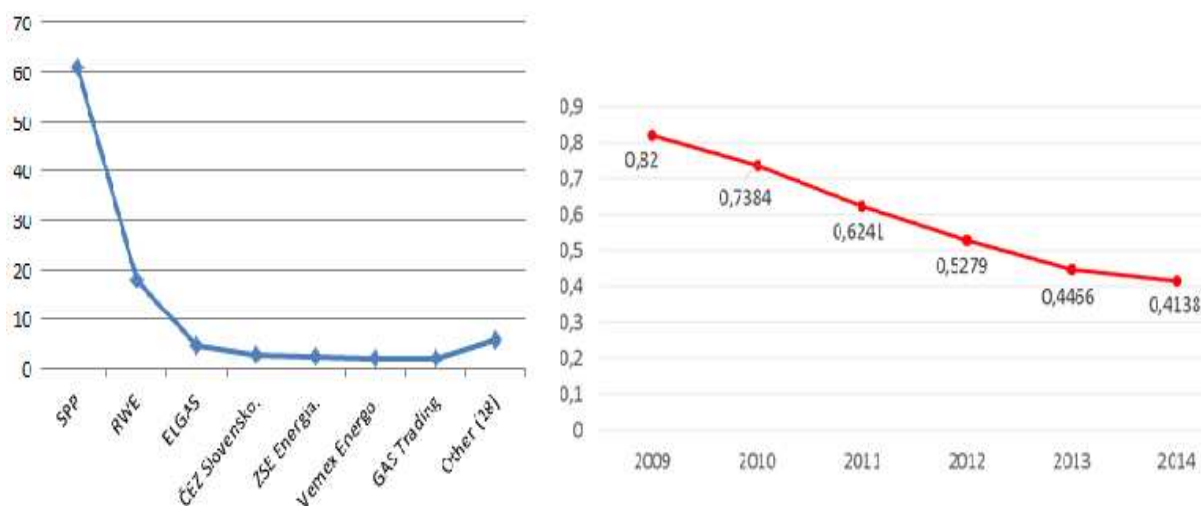
Suppliers	Market share(%)
SPP	61
RWE	18
ELGAS	5
ČEZ Slovensko.	2,88
ZSE Energia.	2,49
Vemex Energo.	2,42
GAS Trading	2,18
Other (18)	6,03

Source: Own processing according annual report of RONI

$$HHI(2014) = 0,61^2 + 0,18^2 + 0,05^2 + 0,0288^2 + 0,0249^2 + 0,0242^2 + 0,0218^2 + 0,0603^2 = 0,413$$

(7)

Chart 7. HHI 2014 and development HHI



Source: own processing according to the table above

In 2015 gas supplies from Russia decreased and were provided by reverse flows from Western Europe, especially through the newly built entry-exit point Budince. From 1 July 2015 was put into operation Slovakia-Hungarian gas interconnector, whose construction began in 2013. (Tlačová Agentúra SR –

Energia. 2017). The volume of supply meets to the needs of Slovak customers in all groups of delivery points (large customers, small businesses and households). This year, begun to build the interconnection of Slovak-Polish, which will play an important role in connecting Eastern Europe - from

the LNG terminal in the Polish city of Świnoujście to the planned LNG terminal on the Croatian island of Krk. (Galczyński, Marcin, 2015) .Another important day this year was May 21, 2015. Slovakia, Romania, Bulgaria and Hungary jointly signed a Memorandum supporting the Eastring gas pipeline project of

eustream. The project involves the construction of a gas pipeline between Slovakia and Bulgaria to connect the Slovakian transport network from the Veľké Kapušany to the trans-Balkan gas pipelines that pass through Ukraine, Romania, Bulgaria and Turkey. (Liptáková, Jana 2017)

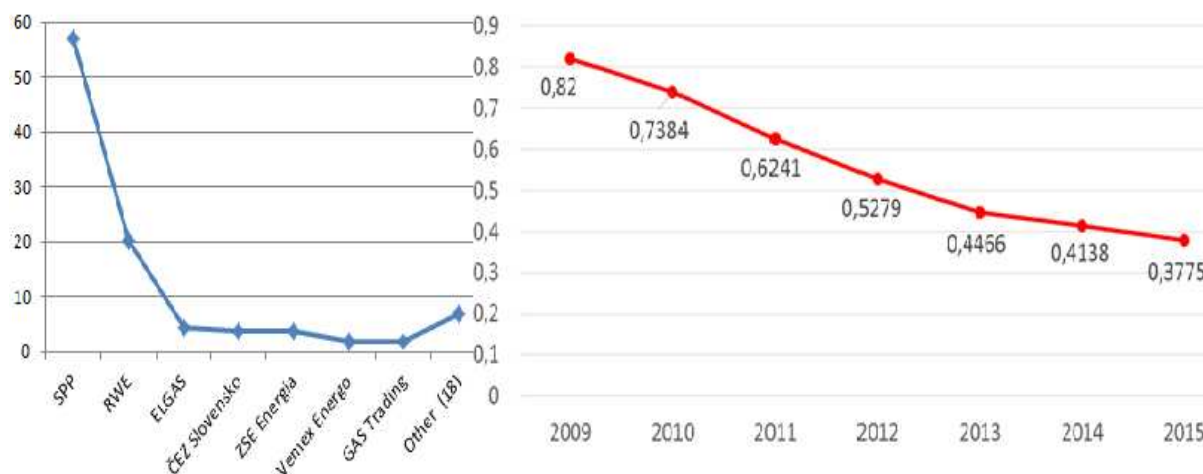
Table 8. Market shares of gas companies in 2015

Suppliers	Market share(%)
SPP	57,13
RWE	20,22
ELGAS	4,42
ČEZ Slovensko	3,66
ZSE Energia	3,76
Vemex Energo	1,93
GAS Trading	1,98
Other (18)	6,89

Source: Own processing according annual report of RONI

$$HHI(2015) = 0,5713^2 + 0,2022^2 + 0,0442^2 + 0,0366^2 + 0,0376^2 + 0,0193^2 + 0,0198^2 + 0,0689^2 = 0,3775 \quad (8)$$

Chart 8. HHI 2015 and development HHI



Source: own processing according to the table above

Gas consumption in 2016 was 51 TWh, which is 1% higher than in 2015. We can note that after its sharp decline in 2014, consumption has stabilized but is still 7% lower than in 2013. This negative development was mainly due to switching to renewable sources, thermal insulation of buildings, houses and increasing consumer awareness of energy efficiency. A negative factor was also the rising temperature during the winter heating season. At the same time, 4 suppliers of gas, whose volume of deliveries did not reach not even 1% of the total

supplied volume of the gas, stopped their activity, because could not compete with already established companies. Of the 25 registered suppliers in the household sector, until to 15 companies perform integrated supplies, gas and electricity supplies. The price for gas supply to households was the whole regulatory period calculated according to the methodology Price Cap for all tariff categories D1 to D4, but D4, with the consumption of gas over 6 500 m³, has not been regulated.

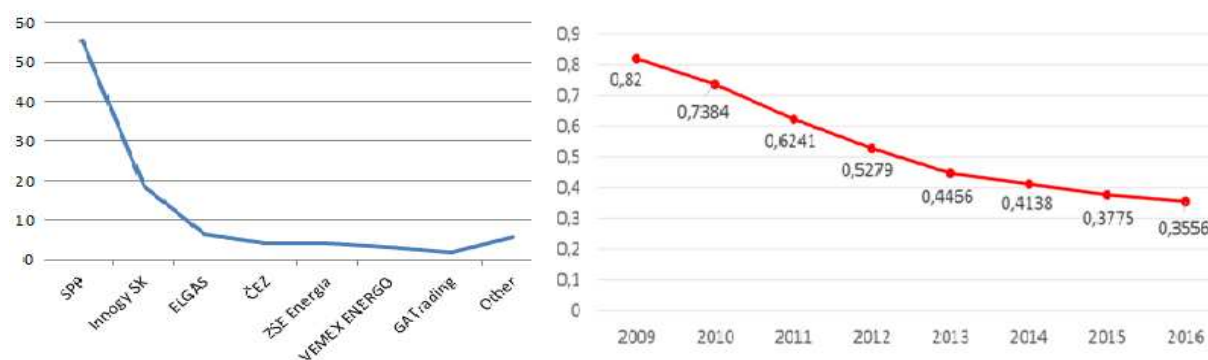
Table 9. Market shares of gas companies in 2016

Suppliers	Market share(%)
SPP	55,50
Innogy SK	18,75
ELGAS	6,47
ČEZ	4,12
ZSE Energia	4,09
VEMEX ENERGO	3,07
GATrading	1,92
Other	5,94

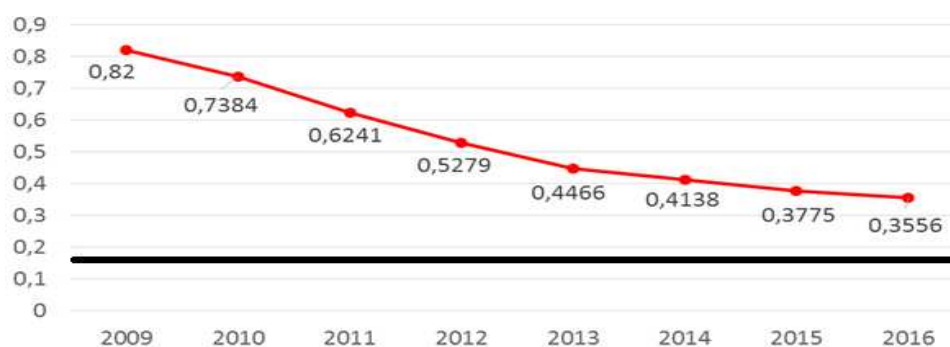
Source: Own processing according annual report of RONI

$$\text{HHI}(2016)=0,5550^2+0,1875^2+0,0647^2+0,0412^2+0,0409^2+0,0307^2+0,0192^2+0,0594^2$$

$$= 0,3556 \quad (9)$$

Chart 9. HHI 2016 and development HHI

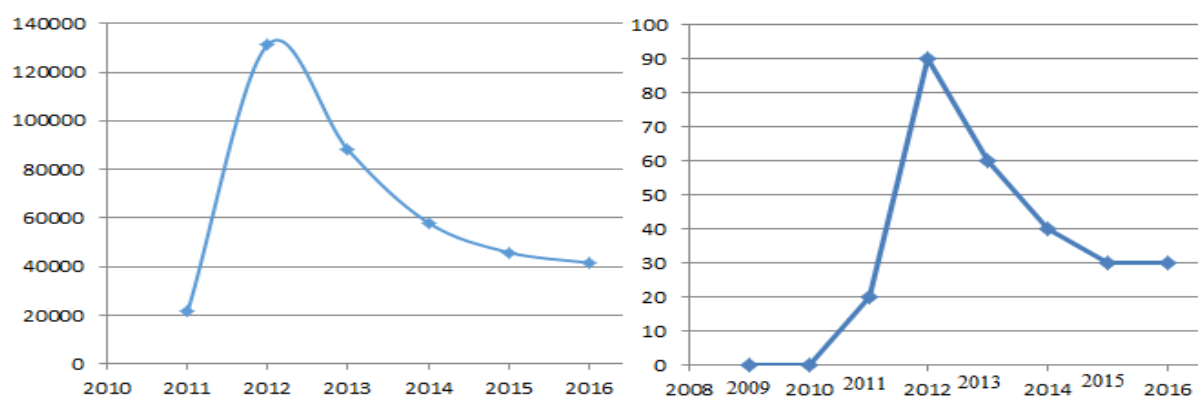
Source: own processing according to the table above

Chart 10. Development of HHI with a recommended value of 0.18

Source: own processing according: Hirschman, 1964

If we want to evaluate the degree of market liberalization, we can use a switching indicator which percentage indicates the rate of change in of suppliers to the total number of of suppliers in the year, while with the change we understand the change the transition to another gas supplier. The breakthrough year was 2011, in which households had the

opportunity to change their traditional gas supplier and switch to the competitive one. The most significant year was 2013, when this indicator reached the highest value of 90% in the household sector, in absolute value 131 385. By 2014 there is a growing trend in switching, then development of this indicator decline slightly.

Chart 11: Development of absolute and percentage switching

Source: Own processing according annual reports of RONI

Conclusion

Increased competition on the gas market, for which we are grateful for the liberalization of this sector, is reflected not only in price but also in differentiated products and expanded marketing. Until recently, on the market was just one homogeneous product, but gradually since 2009, began to apply innovation and product differentiation. Product differentiation first appeared in large customers, but gradually also in the household sector. According to the EC survey, consumers in the Slovak energy market are very satisfied with the range of offers and the number of suppliers on the market, as well as with the ease of switching supplier. Such attitude can express great customer satisfaction or even lack of interest and very low awareness. According to the survey, Slovakia is also the country where there is the highest number of people who do not know how the price of commodities on the market has changed in recent years. To Slovak households was missing a financial motivation to change their suppliers, because they will save less than 6% from their payments for energy. But in 2012, more than 90% of households requested a change in gas supplier, which in absolute terms represented more than 131,000 changes, then this indicator gradually declined. Switching of annual changes to levels ranging from 8.5% to 14% will result in greater competition between individual suppliers for the benefit of end consumers. The main

reasons was saturation of the market, low household awareness and high market share of the three largest companies in the market. These companies by mutual price agreements may be a danger to a real market environment and healthy competition. Liberalization also had some negatives. By applying the unbundling of the 3rd liberalization package, astronomical expenses have arisen due transformed and sold of energy network. The distribution of the networks could be implemented operatively, because the internal communication and management system has already been developed and tested. The benefit of this measure is highly controversial, as there was a worsening of the co-operation between those private companies that started to operate on distributed networks primarily for profit, not as former state-owned enterprises that also fulfilled a certain "social" function. The impact of liberalization on domestic markets in individual countries often points to the unequal status of the individual states in the Community. Strong states prevent liberalization in their own country but take over the power companies especially in Central and Eastern European countries. In order to complete liberalization, a higher investment rate to network renewal is needed, a higher use of renewable energy sources across the Community, so that they are not subsequently deformed prices in these markets.

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EMPLOYMENT AND UNEMPLOYMENT DEVELOPMENTS IN SLOVAKIA AND CZECH REPUBLIC

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Abstract

One of the macroeconomic indicators that impacts on economic growth and has a significant impact on the population is employment, respectively. unemployment. There are a number of factors affecting the development of employment and unemployment, such as demographic change, education, age, active labor market policy, and so on. Unemployment has negative impacts not only on the human being but on society as a whole. We can monitor negative impacts such as drop in living standards, different tensions, worsening human relationships, loss of motivation, loss of employment can also be reflected in the health of the unemployed. In the following paper we had analyzed and compared the development of these indicators in the Slovak and Czech Republics. Due attention should also be paid to people who are disadvantaged in the labor market. Supporting groups at risk of entering the labor market involves improving market entry by providing some support to the employer by increasing the number of jobs and eliminating all forms of discrimination.

Key words

employment, unemployment, employment rate, unemployment rate, comparison

JEL Classification: J8, J50, J51

Introduction

Employment and unemployment are one of the most prevalent concepts in the economy and point to the complex challenges of the market economy. They do not only express the problems of the economic direction, they often express the imbalance of the social and political problems of the given economy in the country. Employment in the macroeconomic sense expresses the working-age population, which included the creation of new products or service offerings. "The justification of its monitoring results from the importance of the human factor and its significant impact on the development of each economy." (Vojtovič, et al, 2013)

The working population is generally divided into 3 groups:

- employed - perform any work that is paid or does not work for various obstacles (strike, sickness, holiday)
- the unemployed - the population who does not work and is registered at the labor office
- all others - not part of the labor force, the population being studied, retirees, people not working on the grounds of illness but also unemployed people who do not work.

If we examine the population by economic activity or inactivity, is divided into economically active and economically inactive population. The economically active population is made up of people who work or

do not work for the moment, for other reasons, and those who are not employed but are actively seeking work. The economically inactive population is characterized by the non-working population, ie the unemployed, the persons receiving the pension, the people with severe disabilities and the persons in the vocational training phase.

Unemployment can be characterized as the current problem of the economy. "It is such a situation on the labor market, when people able and willing to work can not find a job. It is a manifestation of labor market imbalances when the working population offers more jobs than companies willing to employ." (Vojtovič, et al, 2014)

EUROSTAT defines unemployed persons as: persons aged 15-64 who either do not work, have been actively seeking work during the last four weeks of the reference period and would be able to work in the next two weeks.

Unemployment can be monitored from a microeconomic and macroeconomic point of view. Microeconomics considers unemployment as a problem for an individual who has the skills, the possibilities and the experience to gain employment and hence the means of subsistence. Macroeconomics considers unemployment as a problem of the functioning of the economy as a whole in order to find

answers to questions how to address the satisfaction of the needs of the population as a whole.

Unlike employment, unemployment can also be expressed in different forms and these are based on different criteria. From the point of view of the cause, unemployment is divided into frictional, structural and cyclical.

„Frictional unemployment arises as a consequence of the movement of people between regions, jobs or different stages of the life cycle.“ (Mura, et al. 2015) Friction between unemployed population includes people who have just finished schooling, migration for work, mothers ending parental leave, or people seeking better employment. If this type of unemployment occurs in the economy, it does not give rise to significant problems, since it is a natural component and the number of such unemployed persons is always less than or equal to the number of vacancies on the market. The unemployment rate may occur in three variants:

- Search unemployment - wage inequality, inequality of jobs, lack of information on the labor market, forcing the workers to the search better working conditions. If they are longer unemployed, they have higher the chance to discover a better paid job.
- Cautionary unemployment - "If the nature of the job offered does not allow the workforce to move to a more favorable job in the future, it for the sake of prudence rejects the first job offered and remains unemployed until it finds a more advantageous job offer" (Vojtovič, et al, 2016)
- speculative unemployment - when workers drop down, labor supply declines, as people assume that after a certain time wages will rise up and they will increase their offer.

Structural unemployment arises from inconsistencies between supply and demand for work and skills. "Such a mismatch may arise because the demand for a certain type of work is increasing while the demand for another type of work is falling and the offer does not work fast enough.“ (Lisý, 2010, s.385) The structure of vacancies does not coincide with the structure of free workers with certain skills. In this case, workers need to be trained, retrained or

transferred to work elsewhere. In terms of the economy, this form of unemployment is the most dangerous. Because the time needed is considerably longer and requires increased costs..

Cyclical unemployment is associated with economic cycles. Most often it occurs in the transition stages of the economy when the economy moves from the top to the part of the recession. Demand for work is at a lower level regardless of the profession.

Based on duration, unemployment is divided into short-term, usually from 0 to 6 months, with a median duration of 6 to 12 months and a long-term duration of more than 12 months. For the economy as a whole, long-term unemployment has the most negative effects. Disadvantaged populations form the basis of long-term unemployment usually. They are: young people, mothers, people with basic education, people over 50 or disabled (Delgadová, et al. 2017;) .

Another reason for the rise of unemployment is the inflexibility of wages. Under this condition, unemployment is divided into voluntary and involuntary. Voluntarily unemployed people are characterized as persons who are unwilling to work at actual wages and are the result of a situation on the labor market. On the market are vacancies, the population does not respond and offer people prefer leisure or vocational training before job.

Goal and Methodology

One of the most commonly used indicators of employment is the level of employment. It expresses the number of labor forces on the labor market by the following formula:

$$L = E + U,$$

L (Labour) = labor force, E (Employed) = number of employed, U (Unemployed) = number of unemployed able to work.

The second method of calculating employment is the rate of economic activity (REA). It expresses the percentage of the population that is economically active and the population in both productive and post-productive age. It is calculated as follows:

$$REA = \frac{\text{economically active population}}{\text{population in productive and post – productive age}} \cdot 100 \quad (\text{in } \%)$$

Rate of employment rate (RE) is an indicator that evaluates employment developments not only in the country but also between the different regions of the

country. It is stated in percentages and is expressed using the formula:

$$RE = \frac{\text{number of employed}}{\text{population in productive age}} \cdot 100 \quad (\text{v } \%)$$

In the case of unemployment, its development and status are monitored by the number of the unemployed, the rate of unemployment, the magnitude and the extent of long-term unemployment. The number of unemployed assesses the internal state of the country's economy.

The usual state of the monitored economy is expressed using the unemployment rate. Points to the

exact status and evolution of unemployment by the proportion of the employed to total labor force, expressed as a percentage. (Ivanova et al., p. 300) Based on the calculation according to the equation, the data on the percentage of the unemployed from the total number of labor force:

$$u = \frac{U}{L} \cdot 100 \quad (\text{v } \%),$$

u = unemployment rate, U = number of employed, L = labor force

Long-term unemployment rate is used to monitor long-term unemployment in the country. "The long-term unemployment rate represents the percentage of

the long-term unemployed on the total number of labor force and it can be ascertained as follows:" (Masárová, 2011. p. 175)

$$\text{Long-term unemployment rate} = \frac{DN}{L} \cdot 100 \quad (\text{v } \%),$$

DN = long-term unemployed persons a L = labor force

The last indicator for the expression of unemployment is the extent of long-term unemployment. It is stated in percentages and

represents the share of long-term unemployed persons from the total number of unemployed people in the country. It states as follows:

$$\text{Extent of long-term unemployment} = \frac{DN}{U} \cdot 100 \quad (\text{v } \%),$$

DN = long-term unemployed persons, U = total number of unemployed people.

Findings

1. Employment and Unemployment in Slovak Republic

Employment represents the part of the population of the Slovak Republic who is capable of working,

that is, the employed or the other people who are preparing for their profession. The state of this population is surveyed by the Statistical Office of the Slovak Republic by a labor force sample survey or registered employment from company statistics data. Data are reported in monthly, quarterly and yearly statistics.

Table 1. The total number of working persons of SR in the years 2008 - 2016

SR	2008	2009	2010	2011	2012	2013	2014	2015	2016
Number of persons (in thous.)	2 433,8	2 365,8	2 317,5	2 315,3	2 329,0	2 329,3	2 363,0	2 424,0	2 492,1
Growth rate (v %)	-	2,04	0,09	-0,59	-0,01	-1,45	-2,58	-2,81	2,79

Source: Štatistický úrad SR, own processing

Table 1 shows the total number of working persons in the Slovak Republic for the years 2008 to 2016. Generally, the development of the total number of workers is fluctuating. The highest increase among workers is recorded in 2016, when it grew by 2.79% compared to 2015. The largest drop in the number of workers was recorded in 2015, which fell by 2.81% compared to 2014. This decline was apparently due to pension reform and the dropping of strong population rates into retirement or early retirement.

From the point of view of the age structure of employed persons in the Slovak Republic, see. Table 2, we can state that in 2008 the most numerous group of people employed in Slovakia was made up of people aged 40-49. The number of employees represented almost 322.4 thousand persons, representing about 29.4% of the total number of employees in the given year. The total employment of this age group in 2016 compared to 2008 increased by about 11%.

Table 2. Development of employment in Slovak Republic by age groups in 2008 - 2016 (in thousands of persons)

Aged group (in years)	2008	2009	2010	2011	2012	2013	2014	2015	2016	index 2016/2008
15 - 19	16,9	11,8	9	7,5	8,3	7,3	8,4	8,6	11,4	67,46
20 - 24	202,2	173,6	154,2	143,2	138,2	136,7	140,2	145,2	149	73,69
25 - 29	343,3	323,1	309,5	295,1	295,8	286,9	286,3	299,7	298,6	86,98
30 - 34	354,2	355,4	343,9	334,9	330,6	325,2	313	320,6	331,6	93,62
35 - 39	309,3	316,2	325,4	334,7	346,2	353,7	367,7	365,1	369	119,3
40 - 44	322,4	304,4	294,6	293,8	293,6	307,5	326,3	337,4	358,3	111,14
45 - 49	323,1	314,4	307	307,7	304,5	296,7	296	294	296,9	91,89
50 - 54	316,8	307,1	297,4	302,3	294,1	284,7	283,3	288,3	295,9	93,4
55 - 59	192,1	206,1	218	230,4	242,9	249,2	255	264,9	263,3	137,06
60 - 64	43,4	44,1	48,4	53,8	63,3	69,8	73,2	81,3	98	225,81
65 and more	10,4	9,7	10,3	12,2	11,7	11,7	13,9	19	20,4	196,15

Source: Štatistický úrad SR, own processing

The smallest share of workers is in the group of people aged 15-19. In 2008, it represented approximately 16.9 thousand people, or about 1.54% of the number of people on the labor market. For the whole monitored period, we record a significant decrease in this age group, by almost 33%. We expect

this to be due to the continuing interest of young people in increasing their qualifications, by passing a vocational or at least a first level of higher education. This claim can also be seen in the development of employment according to the educational level, which is presented in Table 3.

Table 3. Development of Employment in SR by Educational Level in 2008 - 2016 (in thousands of persons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Basic	109,9	92,8	91,4	90,7	87,8	91,5	85,9	97,4	105
Full secondary vocational with graduation	126	105,3	81,7	104,3	112,2	91,8	146,1	155,8	150,3
Full secondary vocational	857,4	842,4	828,1	795,8	784,1	829,4	809,7	831,6	851,6
Higher professional	19,5	20,1	16	33,5	33,8	25,8	24,6	20,8	21
University – 1st degree	24,7	36,4	43,9	53,1	61,5	63,2	80,4	74,3	64,4
University – 2nd degree	356,1	362,8	398,2	395,8	393,1	417,7	431	460,1	503,2

Source: Štatistický úrad SR, own processing

In 2008 we observe that the most employed people (857.4 thousand) have completed full secondary vocational, which represents approximately 58% of the total number of employees. The second largest category is employed with university - second degree education, with 356,000 inhabitants (24%). Even in 2016, as in 2008, the group with full secondary vocational education remains the most numerous

group in the labor market. In 2016 it was about 50%, representing 851.6 thousand employed people. In second place this year, but with a much larger number, there was a group of graduates with a second degree university education. Compared to 2008, this is an increase of almost 140 thousand workers, with a total of 503.2 thousand people employed (30%).

Table 4. Number of unemployed persons in SR in 2008 – 2017

SR	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Average number	230,4	340,2	380,8	389,3	405,9	415,0	385,7	354,6	301,0	227,5
Average number of available	199,6	303,1	335,3	351,0	367,1	380,7	345,1	310,2	257,7	192,5
Rate of registered unemployed (%)	7,7	11,4	12,5	13,2	13,60	14,10	12,80	11,5	9,5	7,1
Growth rate (%)	-	47,65	11,92	2,23	4,27	2,25	-7,07	-8,06	-15,11	-24,40

Source: Štatistický úrad SR, own processing

In the monitored period, registered unemployment has increased since the beginning of the period until 2013. In 2013, the registered unemployment rate was almost twice as high as in the beginning, almost 14.1%. At the beginning of the period it was 7.7%. Due to the fact that Slovakia was still dealing with the situation that arose after the crisis in 2009. Based on the data in Table 4. we can conclude that the registered unemployment rate has increased significantly since 2008 and stopped in 2013 at the highest point of 14.1%. Consequently, this situation has changed from 2013 to 2017 and we see that this registered unemployment rate is falling and it stopped at 7.1% in 2017. Year-on-year, the biggest difference can be observed in 2009 compared to 2008, with registered unemployment rising by approximately 3.7%. Subsequently, we can see that the year-on-year increases in registered unemployment by 2013 range

from 0.4% in 2012 to 1.1% in 2010. From 2014 we can see a reduction in registered unemployment. The largest decline was recorded at the end of the monitored period when unemployment fell by 2% compared to 2015.

2. Employment and Unemployment in the Czech Republic

As employment in individual sectors in Slovakia and in Czech Republic (CR) is varied. The total number of employed persons was 5 138.5 thousand inhabitants in 2016. Compared to 2010, total employment growth was approximately 5%, which was an increase of approximately 253.3 thousand employees.

Table 5. The total number of working persons in CR in the years 2008 – 2016

CR	2008	2009	2010	2011	2012	2013	2014	2015	2016
Number of persons (in thous.)	5 002,5	4 934,3	4 885,2	4 904,0	4 872,4	4 890,1	4 937,1	4 974,3	5 041,9
Growth rate (v %)	-	-1,36	-1,00	0,38	-0,64	0,36	0,96	0,75	1,36

Source: Štatistický úrad ČR, own processing

The largest share of employees in the Czech Republic is in the processing industry, which employs approximately 1 428.7 thousand inhabitants. Workers represent approximately 27.87% of the total number employed in 2016. In second place with a 11.2% share

of employed consists employed in wholesale and retail. In 2016, approximately 605.8 thousand people worked here. Compared to 2010, we can see a slight increase (about 2%).

The largest increase in 2016 compared to the first year can be seen on the basis of a basic index in the field of scientific and technical services, when employment has increased by almost 50 thousand employees compared to 2010, which represents an increase of almost 25% in comparison with the first monitored year. In 2016, employment in the sector

amounted to approximately 4.89% of the total employment.

The largest increase in the number of employees is seen in the manufacturing industry where the increase in the number of employees was approximately 192 thousand.

Table 6. Development of employment in the Czech Republic by economic activity in 2008 - 2016 (in thousands of persons)

	2010	2011	2012	2013	2014	2015	2016	Index (2016/2010)
Agriculture, forestry, fishing	151,2	145,6	149,2	149,6	136,7	147,5	149,1	98,57
Mining and quarrying	47,9	46,1	43,3	41,1	35,7	37,8	38,9	81,17
Processing industry	1235,9	1287,6	1299,1	1285,3	1329,8	1376,8	1428,7	115,59
Production and distribution of electricity, gas, heat and air conditioning	56,8	57,7	50,9	54	57,2	49,2	52,8	92,98
Water supply; wastewater, waste and sanitation activities	50,2	51	46	51,3	55,4	57,1	49,5	98,53
Building and Construction	464,9	431	425	420,3	413,9	396	386,3	83,1
Wholesale and retail trade; repair and maintenance of motor vehicles	593,8	597,4	601,9	605,3	590,2	615,7	605,8	102,02
Transport and storage	328,1	322,2	308,9	301,9	295,9	297,6	314,2	95,76
Accommodation, catering and hospitality	190,1	185	177,5	178,5	195,2	197,2	183	96,25
Information and communication activities	137,1	145,4	125,3	139,8	148,7	141,5	147,6	107,63
Banking and insurance	115,3	122,5	136,7	137,3	121,5	118,1	117,2	101,62
Real estate activities	40	41,8	45,7	48,8	46,2	44,9	39	97,45
Professional, scientific and technical activities	202,1	198,7	212,4	220,8	222,4	237,5	251,5	124,44
Administrative and support activities	113	114,5	115,9	129,4	129,8	128,9	128,7	113,89
Public administration and defense; compulsory social security	329,3	314,8	305,5	315,9	319,4	316,2	330,2	100,25
Education	295,6	295,5	318,9	322,6	326,2	322,8	338,6	114,54
Health and social care	339,9	324,8	333,4	339,3	353,5	351,6	360,4	106,03
Cultural, entertainment and leisure activities	82,9	82,6	80,5	80,3	81,2	81,7	92,8	111,86
Other activities	93,7	88,2	91,9	93	87,6	90	86,6	92,45

Source: Štatistický úrad ČR, own processing

The most significant decrease in the number of employees based on the base index can be seen in mining and quarrying. The decline in employment in this sector was about 19%. The most marked decline in employment is seen in construction where it was around 79,000 employees.

In the monitored period, registered unemployment in the Czech Republic was completely different from that in the SR. Unemployment in 2010 amounted to 561,551 unemployed. In 2011, we registered a slight

decrease of registered unemployment by about 53 thousand unemployed.

In 2012 and 2013, unemployment increased, in 2012, unemployment amounted to 545,311 and in 2013 a further increase of around 51,000 unemployed people representing a value of 596,833 registered unemployed.

From 2013, and even then other years registered unemployment declined, and it was around 381,000 unemployed in 2016, which compared to 2013 is a decrease of almost 210,000 unemployed.

Table 7. Number of unemployed persons in CR in 2008 – 2016

CR	2008	2009	2010	2011	2012	2013	2014	2015	2016
Number of persons (in thous.)	229,8	352,2	383,7	350,6	366,9	368,9	323,6	268,0	211,4
Growth rate (v %)	-	53,26	8,94	-8,63	4,65	0,55	-12,28	-17,18	-21,12

Source: Štatistický úrad ČR, own processing

The number of job seekers per job at the beginning of the period amounted to 18.2 candidates per 1 job. From 2014, the number of candidates per job started to decrease. This year, the number of job seekers is 9,2 per job, which is less than 7,8 candidates

compared to 2013. Subsequently the last two years we have reduced the number in 2015 by almost half to 4.3 to 1 candidate job and the number dropped to 2.7 in 2016.

Table 8. Development of Unemployment in the Czech Republic by Age, in 2010 - 2017 (in thousands of persons)

Age group	2010	2011	2012	2013	2014	2015	2016	2017	Index (2017/2010)
15 - 24	73,4	66,8	72,7	68,7	56,4	43,7	34,6	25,9	35,26
25 - 29	56,6	45,5	50,7	46,8	42,2	37,5	30,6	19,7	34,71
30 - 34	45,9	43	43,4	47,4	41,5	35,7	26,4	17	37,08
35 - 44	79,6	77,5	82	89,1	78,9	65,3	48,7	41,2	51,73
45 - 54	78,8	72,7	70,5	69,1	63,6	49,4	38,6	32,9	41,75
55 and more	49,3	45,1	47,5	47,7	41	36,5	32,6	22,1	44,85

Source: Štatistický úrad ČR, own processing

In individual age groups (Table 8), we can see the decline of the individual unemployed. The largest drop in unemployment in 2017 compared to 2010 was recorded in the category of 15 to 24 years when the decrease was almost 75% from 73.4 thousand to 25.9 thousand unemployed. The largest share of the unemployed was the unemployed in the age group from 35 to 44 when the number of unemployed exceeded 41.2 thousand unemployed, which represented about 26% of the total number of unemployed in 2017. The lowest share of total unemployment is the unemployed aged 30-34 approximately 11%, the number of unemployed is around 17 thousand. In 2010, the largest share of the unemployed was also the age group from 30 to 44 years. The number of unemployed in this year was 79.6 thousand, which was about 35 thousand more than in 2017. The lowest share is the unemployed aged 30-34, making up about 45.9 thousand, or 12% of the total number of unemployed. Compared to 2017, this number exceeds approximately 31 thousand people.

From the point of view of education, we can state that the most significant decrease of unemployed can

be observed in jobseekers with secondary education without graduation. The decrease was approximately 113.1 thousand. The percentage is down by almost 75%. In this group we can also observe the highest unemployment rate in all monitored areas. Unemployment reaches 60.9 thousand, representing 38.4 percent of total unemployment. We have the lowest unemployment rate for jobseekers with higher and university education, the unemployment rate is 16.9 thousand in 2017, which represents approximately 10.69% of total unemployment. Compared to 2010, unemployment decreased by about 8.7 thousand.

Conclusion

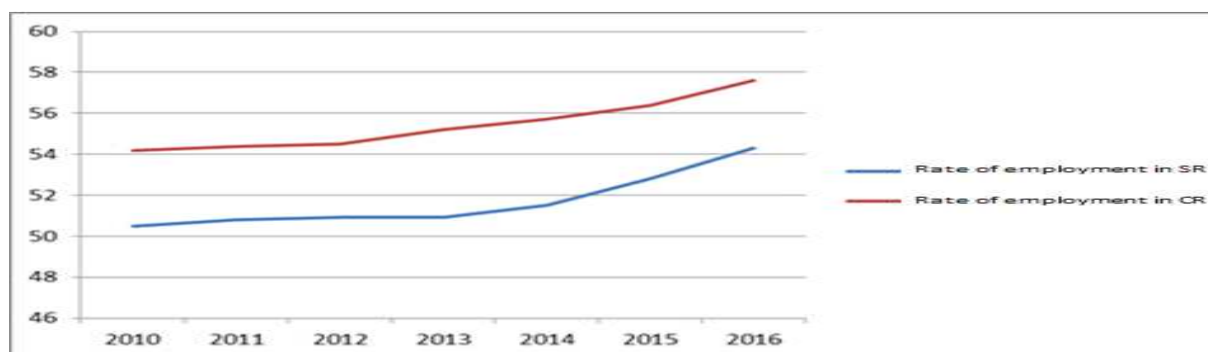
In the previous section, we have shown a different situation in the labor markets and the functioning of the labor market in each country. The key difference in individual markets is the employment rate. The level of employment in individual countries also influences the situation in the country, individual political and economic factors.

The development of the employment rate as we can see in the graph in both countries is different. Employment Graph is shown in Graph 1. In the Czech Republic, the employment rate is substantially higher than in Slovakia. Average unemployment rates were 55.43% in the Czech Republic, while 51.67% in Slovakia.

Employment has grown throughout the period under review. In the Czech Republic, employment

grew by 3.4% at the end of the period, in Slovakia it was an increase of 3.8%. The highest employment rate reached both countries in the period to end at 2016 when it reached 57.6%, in Slovakia it was 54.3%. In 2016, the employment gap between countries is also decreasing and the overall rate is the lowest among countries, with a value of 3.3%.

Graph 1. Comparison of employment rates in the Czech Republic and Slovakia (in%)



Source: statistics.sk, czso.cz, own processing

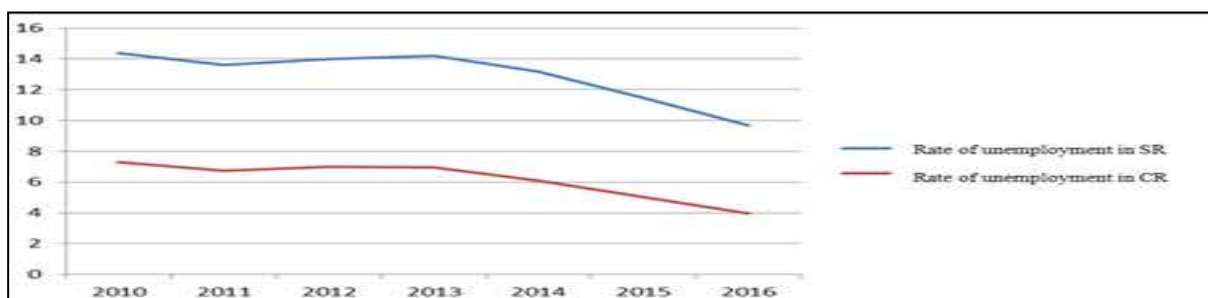
Unemployment is one of the most serious macroeconomic problems. After the creation of independent states, the situation in the Czech Republic stabilized, but in Slovakia it almost doubled.

The average unemployment rate for the monitored period 2010 to 2016 is about 12.94% in Slovakia, while in the Czech Republic it is more than a half less than 6.15% over the period. The period with the highest rate of unemployment is the beginning of the period under review, ie 2010 in Slovakia was almost double the unemployment rate of the Czech Republic, the figure was around 14.4% and in the Czech Republic it was only 7.3%. 2012 and 2013 brought us an increase in the unemployment rate when unemployment reached 14% above all in Slovakia. In 2012 it was 14% and the value in 2013 is 14.2%. In the Czech Republic, unemployment rates reached 7%

in both years. From 2013, the unemployment rate in both countries decreases and the lowest value is reached in 2016 when the value in Slovakia was 9.7% and in the Czech Republic it reached 4%.

Unemployment among young people is a persistent problem for both economies. The average unemployment of young people in Slovakia amounted to 68.83 thousand unemployed and in the Czech Republic it was lower and represented 59.47 thousand unemployed. Unemployment had a decreasing tendency throughout the period in Slovakia. Slovakia reached the unemployment rate of 83.8 thousand unemployed in 2010. Subsequently, unemployment increased to 48.7 thousand unemployed in 2016, the unemployment rate at the end of the period decreased by almost 35.1 thousand unemployed persons.

Graph 2. Comparison of unemployment rates in CR and SR



Source: statistics.sk, czso.cz, own processing

In the Czech Republic, unemployment was similar to that in Slovakia, with the exception of 2012, when unemployment in the Czech Republic increased by 6.1 thousand unemployed. The highest unemployment rate in the Czech Republic in 2010 was 73,400 unemployed. The Czech Republic also managed to reduce unemployment by 2016, reaching 34.6 thousand unemployed, which represents a decrease by 38.8 thousand unemployed compared to the beginning of the monitored period.

We are mostly recommended for Slovakia on the basis of comparison of Slovakia with the Czech Republic, because the situation in Slovakia is more critical compared to the situation in the Czech Republic.

Both Slovakia and the Czech Republic should focus on the education system and continue to pursue reform and thereby promote the employment of young people in the labor market. As a positive result, we are trying to curb gymnasium education, rather than promoting education linked to practice. In addition, the removal of highly educated people abroad should be limited, improving conditions for which they would not have to leave abroad.

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Our next suggestion is to put more emphasis on employment policy. Focus on encouraging more unemployed people to re-enter the labor market. Support should be given to projects to support education, gain professional experience, or support for retraining courses. Projects that would also help young people to integrate into the labor market.

The work of the Labor Offices could also be improved. Improving services would also improve the reporting of current job offers and vacancies, thus preventing people from losing their working habits.

Due attention should also be paid to people who are disadvantaged in the labor market. Supporting groups at risk of entering the labor market involves improving market entry by providing some support to the employer by increasing the number of jobs and eliminating all forms of discrimination. A good tool in combating discrimination and disadvantaging people in the labor market is that many economists consider regular checks and, in the event of certain discrimination, the imposition of high sanctions or restrictions on their activities.

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THE STATE SOCIAL SUPPORT INSTRUMENT TOOLS WITHIN THE LIFE OF A MIGRANT

Tatiana MASÁROVÁ

Abstract

There are two fields of state social policy linked in this paper – migration policy and family policy. This paper is relevant for the terminology of social sphere. For the State, which wants to implement integration policy towards migrants, it is necessary to examine the establishing of care for migrants in one subsystem of social protection (welfare) – state social support. The main objective of this paper is to examine measures (instruments) of state social support and their application in the life of a migrant. Following tasks have been identified for the realization of our objective: to define key words, to analyse measures of state social support in the life of a migrant, previous task, to analyse quantitative indicators of the quality of family life of migrants. Research methods used in the article: theoretical general methods of scientific knowledge – induction, deduction, analysis, synthesis and comparison of available bibliographic references, discussion and scientific abstraction for generalization of the results.

Key words

Family Policy, Migrant, Quality of Life of Migrants, Social Protection, State Social Support.

JEL Classification: F22, H53, I38

Introduction

Foreign migration is becoming a society agenda and a challenge of the 21st century and due to globalisation processes, the issue of migration is becoming more and more actual. Its influence can be seen in all spheres of social life of all parties. Globalization processes characterized by the free movement of goods and capital are extended by the free movement of labour. Established development trend of international migration is based on globalization processes. Motives of migration from the beginning of mankind, not excluding the present, result from a desire to increase the quality of human life (Tupá, 2013, Tupá, 2015, Štefančíková, Masárová, 2015).

Author of this article focuses the attention to managing tools in selected area of life of migrants in Slovakia in the sphere of social protection. One subsystem of social protection is handled by offering a brief overview of the current state, overview of legislative which regulates the sphere and an overview of competencies which different public institutions hold. We also state the problems that foreigners encounter in this area of social protection.

Terminological excursion, goal and methodology of the research

In accordance with the International Organization for Migration, migration is a movement of a person or

a group of people from one geographical unit to another across an administrative or a political boundary in order to settle definitively or temporarily on a place different than the place of origin of the person (IOM, 2005). Migration is a form of a spatial mobility of the population, the essence of which is the movement of people across national borders with the intention to settle in other country for a certain period of time (Divinský, 2005).

The concept of migrant (synonym foreigner) is another frequent concept which we often encounter in regards to migration problems. A migrant is defined by the United Nations Organisation as a person who, for whatever reasons, changed his country of permanent or habitual residency and has moved from their home country to another country (Concept of Foreigners' Integration in the Slovak Republic, 2009). A foreigner is anyone who is not a citizen of the Slovak Republic (Act No. 404/2011 Coll. on residence of foreigners, as amended). Third-country national is any foreigner who is not a citizen of the European Economic Area (Concept of Foreigners' Integration in the Slovak Republic, 2009).

Social protection in the Slovak Republic is ensured by the social security system, consisting of social insurance, state social support, and social assistance (Report on the Social Situation of the Population of the Slovak republic, 2016). Social protection system is a set of legal, financial and organizational instruments and measures designed to compensate unfavourable financial and social consequences of different life circumstances and events that threaten recognized social rights or designed to prevent these life

situations. Social protection system has been created with the purpose to compensate negative consequences of different life events (Matlák, 1996).

Family is a group consisting of two parents and their children living together as a unit (English Oxford Living Dictionaries, 2018). Family policy usually refers to social programs, laws, and public directives designed to promote and enhance marriage, reproduction, and raising children. Family policy also ensures child protection and child and spousal support and attempts to resolve conflicts between work and family. The state usually initiates such policies, but employers or voluntary organisations may also establish them (International Encyclopedia of Marriage and Family, 2016). The state family policy principles are:

- shared responsibilities,
- subsidiarity,
- taylor- and purpose-made,
- solidarity,
- gender equality,
- equality-based approach to parents,
- coordination and harmonisation of the family policy,
- balance and flexibility,
- openness and changeability (Concept of state family policy, 2004).

The aim of state social benefits is financial participation of state in overcoming unwanted decline in living standard of a family caused by the formation, respectively by the duration of certain state-recognized life events. There is a financial support for families with dependent children mainly in specific life situations. Providing of state social support is not bound to a certain income level attained by the family (Masárová, Sika, Španková, 2015). State social benefits contribute to cover costs for nurture and other personal needs of children and also the costs associated with other social events. State social support system consists of the lump-sum and recurring benefits (Table 1) (Report on the Social Situation of the Population of the Slovak republic, 2016).

Laluha in: Stanek (2011) inclines to the definition of quality of life according to which the quality of life is understood as a socio-economic category; it is historically conditioned level of life processes; a person or a society reproduces and develops its existence within these life processes in accordance with the principles of humanism and humanity. It is the responsibility of the recipient society to create humane conditions for the stay of migrants.

This paper has a theoretical character. The goal of this paper is to examine measures (instruments) of state social support and their application in the life of a migrant. The goal of this submitted paper is based on induction, deduction, analysis, synthesis and comparison of available bibliographic references, discussion and scientific abstraction for generalization of the results; in the paper, literature review method was employed. A literature review is a systematic search of published work to find out what is already known about the intended research topic. The purpose of a literature review is not only to identify and analyse all information written about a topic, but also to gain insight and understanding into the problem at hand. Literature review was conducted in February 2018. The selection criteria for this paper are all of the relevant statistical resources of state social support in the Slovak republic; the data were obtained using statistical resources in the family policy.

Findings - The context of family in the life of migrant and managing in terms of state social support by responsible subjects

The quality of life is measured by indicators. The application of hundreds of indicators can be found in the list of references dedicated to the quality of life. It turns out that the constantly increasing number of indicators does not contribute to the objectification of measuring the quality of life.

It is questionable whether it is possible to measure human development, whether it is possible to reliably determine the level of quality of life of a country or an individual (in this case the family of a foreigner with underage child) (Masárová, Živčicová, 2012). Indicators of quality of life are understood as qualitative-quantitative characteristics of social and economic processes. They contain various fields and aspects of social development of individuals, social groups and their perception by the population. Information (such as content element of the indicator) is obtained in particular:

- by the statement of respondents (subjective attitudes, feelings, opinions, judgments, evaluations),
- by the use of objective data (collected and processed by different institutions, organisations, authorities such as the Statistical Office (Laluha in: Stanek, 2011)).

Society must adapt to rapidly changing conditions and based on this fact, management of human resources faces significant demands on flexibility and responsibility of its policies. The integration of a migrant into the society is a complicated complex of relations with social environment of host country,

economic and legislative conditions and factors affecting the dynamics of this process. Integration means that a group of migrants wants to retain some elements of their original culture and also the majority population accepts the specifics of the new group (Berry, 1990; Fenton, 2003; Scott, Marshall, 2009). Integration policy as part of the global approach to migration is one of the main priorities for the European Union agenda. (Bosswick, Heckmann, 2006). We have to accept migration and find suitable tools by migration policies. Development of migration show that country which act without international

cooperation has limited options of migration management (Ellis, P., Roberts, M., 2016).

In our paper we consider the possible responsible subjects. In our case, legislative of foreign migration of labour force in the Slovak Republic should be managed by Ministry of Labour, Social Affairs and Family of Slovak Republic. Competences regarding the execution of mentioned measures should be transferred to offices of labour, social affairs and family. We have pointed out non-governmental organizations as other responsible institution (Table 1).

Table 1. Measuring the quality of life of migrants in terms of state social support

LIFE VALUE	INDICATORS FOR MEASUREMENT OF STATE SOCIAL SUPPORT OF FOREIGNERS	RESPONSIBLE SUBJECTS
FAMILY	<ul style="list-style-type: none"> • Number of child allowances paid to foreigners • Foreigners receiving child allowance supplement • Number of parental allowance paid to foreigners • Foreigners receiving childcare allowance • Number of childbirth allowances paid to foreigners • Other allowances 	Ministry of Labour, Social Affairs and Family of the Slovak Republic. Office of Labour, Social Affairs and Family. Non-governmental organizations. Others.

Source: own processing

In terms of number of beneficiaries, child allowance is the most extensive state social support benefit. The adoption of Act introduced the provision of flat rate child allowance per month for each dependent child aged up to 25 years with effect from 1 January 2004, regardless of paternal income (Act No. 600/2003 Coll. on child allowance, as amended).

Act with effect from 1 January 2008 put into practice the child allowance supplement, granted to parents who receive an old-age pension, early old-age pension, disability pension, or a pension for service, allowance for nursing (Act No. 600/2003 Coll. on child allowance, as amended).

Parental allowance is a state social benefit which the state grants to an entitled person to provide proper care for a child less than three years of age, or up to six years of age, if the child has long-term ill health (Act No. 571/2009 Coll. on parental allowance, as amended).

By providing a childcare allowance the state contributes to a parent or natural person being entrusted with the care of the child to cover the costs incurred in caring for the child. A childcare allowance is provided within three or six years of the age of the child with a long-term adverse health condition if childcare is provided by another legal entity or natural person at the time of work performance or during the

full-time study, e.g. by placing the child in a facility – day nursery, kindergarten (Act No. 561/2008 Coll. on childcare allowance, as amended).

By providing childbirth allowance, the state enables parents to cover the expenses associated with satisfying the necessary needs of the newborn. (Act No. 383/2013 Coll. on childbirth allowance, as amended).

The conditions for the entitlement include, among others, the applicant's permanent residence and domicile in the Slovak Republic (Report on the Social Situation of the Population of the Slovak republic, 2016).

When measuring the quality of life of migrants we evaluate the success rate of the integration process of foreign nationals into the majority society. For the purpose of our research, we deal with the quality of life through the prism of family and benefits that are available to foreigners in the system of state social support, for example, families of foreigners with underage children have an opportunity of receiving single or repeated financial benefits when the state takes over the role to participate in solving some of the state-recognized life situations in order to prevent unwanted decline in living standards of families which take care of dependent children (possible indicators of measurement in the state social support

of foreigners, see Table 1). We also consider the possible responsible parties. In our case, legislative measures of state social support for foreigners should be managed by Ministry of Labour, Social Affairs and Family of Slovak Republic. Competences regarding the execution of mentioned measures should be transferred to offices of labour, social affairs and family in the place of residence of the foreigner. We have pointed out non-governmental organizations as other responsible subject.

Discussion and conclusion

From the 1940s to the 1970s, governments in industrialized countries developed a broad range of social programs to guarantee citizens and their families at least a minimal level of income in the event of unemployment, accidents, sickness, pregnancy, childbirth, disability, and retirement. The development of the welfare state was based on the assumption that governments (as well as employers, employees, and community groups) have a role to play in maintaining income security and well-being. Welfare states were also premised on the idea that governments should assist families at certain stages of life (such as childbirth and retirement) or during family crises (such as marital breakdown or disciplinary problems with children (Baker and Tippin, 1992)). Welfare regimes are collective agreements about social programs (including services and benefits for families) that endure over the time despite the changes in government (Esping-Anderson, 1990).

Until the 1980s, many governments saw the family as the basic unit of social support and respected family privacy unless children were flagrantly neglected or abused, discipline problems were apparent, or parents were clearly impoverished. Nevertheless, the state in industrialized countries has regulated some aspects of family life for more than a century, requiring the registration of marriages, births, and deaths. It has also legalized marriage, adoption, and separation, and tried to ensure that men support their wives and children. The state has also provided

income security and social services for families in need (Ursel, 1992). As a result, social legislation needs to bolster the family (or a preferred version of family) in the fight against the intrusion of alternative and unhealthful (or immoral) lifestyles.

The purpose of this paper was to provide an overview of existing management measures in the quality of life of migrants in terms of state social support. The importance of management measures has been repeatedly emphasised by all the institutions of the EU. This is an urgent need to evaluate migration management at a European and national level. Migration requires systemic approach and qualified management. Slovak Republic must be ready and willing to participate in the harmonization of migration policies of individual states within the European Union. Well-thought-out, institutionalized and state-coordinated process is a prerequisite for successful handling of migration-related problems. With the volume of foreign migration, the nature of migration processes is changing significantly, new approaches, policies and migration management are being formulated, legal norms are being redefined and the number of institutions dealing with the foreign migration is growing.

Thus, the main advantage of the paper lies in detailing all the instruments for measurement of state social support of foreigners. The paper has some limitations of the current study. Research concerned the state of knowledge state social support for foreigners in the conditions of the Slovak republic. This theme of research is worth of continuing in aim to make comparisons between Slovak republic and European countries.

We consider housing, education, health care, civil and political participation of foreigners to be the next case for the research in the field of migration-integration policy.

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GLOBALLY APPLIED FREE LABOUR MOVEMENT MANAGEMENT IN TERMS OF CONTEMPORARY MIGRATION PROBLEMS

Darina SAXUNOVÁ

Abstract

The research object of this scientific paper is the freedom of labour force movement. The paper objective is to study development and trends of labour force movement from the global perspective. Moreover, the paper further examines, and analyses migrants' flows especially within OECD countries stressing the position of Slovakia, as a member of Visegrad 4 Group countries, too. The analysis also covers the measurements introduced by selected OECD countries and Slovakia. The objective of investigations are phenomena, processes and measures associated with solving problems of big migrants' surge recently. The changes in integration policies in OECD countries underlining the principle of solidarity that should be emphasised in their implementation. Finally, the policies established are analysed and recommendations for the management of labour force movement are discussed that could also be implemented for "desired or undesired" migration of people in Slovakia or worldwide.

Key words

labor mobility, integration policy, Slovak labor market, free movement, migration

JEL Classification: J6, J8, J61, H24

Introduction

It is almost a decade since the financial crisis burst out and brought the bankruptcy of many companies. The labour market suffered from closing many work positions and the unemployment rate took off. Economic situation was deteriorating almost all over the world. Labour market recovery was slow, moreover, existing and new war conflicts, especially in Syria in 2011 and Ukraine in 2014, problems in Africa, lead to the significant increase in migration flows. Europe has been shaken by unbelievable increase of migrants and refugees i.e. asylum seekers. To design appropriate policies that would tackle and facilitate the integration of African and Asian migrants and refugees into the labour markets have become an urgent task especially in OECD countries. Governments have been solving the problems how to distribute evenly humanitarian migrants across the OECD countries, or to do so for refugees or asylum seekers, as, well.

Goal and Methodology

Free movement of labour force must be perceived from economic, social, cultural and legal perspective. The objective of the scientific paper is to investigate the situation in labour market outcomes of migrants. Migrants in OECD documents are named people who have been relocated to a new labour market voluntarily or involuntarily, which should be

corrected, migrants are the consequence of voluntary migration movement and refugees and asylum seekers are the consequence of involuntary migration. Migration covers migrants and refugees (asylum seekers). Foreign-born workers include voluntary migrants and also refugees who are interested in joining labour market in their new destination country. This paper presents a) the analysis of migration development especially focusing on changes in migration policies and recent trend of migration in Slovakia and within the Visegrad Four. In general, each citizen of the European Union has the right to work and live in other EU member state without being discriminated referring to his/her state nationality and for the work performed he/she must be rewarded in accordance with the EU norm and National legal regulations and directives. Theoretical thresholds are compiled and processed, then the research continues by collection and analysis of the quantitative and qualitative data, that allows better understanding and interpreting the data collected, which is called sequential explanatory design i.e. a type of mixed-methods approach (synthesis, deduction, analysis, comparison) being used in investigation process. Results are analysed and compared, focusing on the characteristics of a Slovak position. Data were obtained from the OECD and ministries of Slovak Republic databases and Statistical authority of the Slovak Republic.

1. Labour Mobility and Economic Aspects of Migration in Literature Overview

„Labour mobility consists of relocations of workers both across physical space (geographic mobility) and across a set of jobs (occupational mobility)“ (Long & Ferrie, 2003). Geographic labour mobility is explained as a natural person's ability and interest to perform work in a particular physical location, while occupational mobility is considered as a natural person's ability to change types of work. Paul Krugman (2003) defines international labour mobility as the movement of workers between countries. International Economics Glossary presents a definition of labour mobility as “the ability of workers to move between industries and locations to obtain higher wages or more favourable working conditions”. Gromov points out that “increasing and maintaining a high level of labour mobility allows a more efficient allocation of resources. Labour mobility has proven to be a forceful driver of innovations”. (Gromov, 2010). “Labour mobility refers to the ease with which labourers are able to move around within an economy and between different economies. It is an important factor in the study of economics because it looks at how labour, one of the major factors of production, affects growth and production” (Radcliffe, 2009). Local public goods provision, production subsidy or infrastructure investment have an impact on density of inhabitants and are attractive targets for the labour force. Frequently, “an increased supply of local transport infrastructure, schools, health services, etc. in one region would alleviate dispersion forces and therefore increase agglomeration in that region” (Combes and Ypersele (2013). Increased agglomeration attracts investors and of course it is again a target for movement of labour force seeking the work and place to settle down. Most models of international trade assume that labour is perfectly mobile within a country between industries and locations but not mobile at all between countries.

A group of labour seeking migrants should be included into the economic life by selected destination country. No doubts managing mobility and migration require elaborated legislation associated to this matter and financial resources. “A pilot initiative of the European Investment Fund – the Social Impact Accelerator (SIA) assists to raise equity finance to support social enterprises promoting social inclusion by providing alternative sources of employment to marginalised social groups e.g. socially and financially excluded people, economic and political immigrants and refugees, disabled people, former convicts, and minorities.” (Saxunova, 2015). According to Gehringer (2014, p.41) “if mobilised

international financial resources reach well-performing financial systems, then they enhance economic growth and stabilise the entire industrial system. If, on the contrary, progressive financial openness occurs in environments with poorly functioning financial institutions and financial markets, economic opportunities are curtailed, with detrimental consequences on economic growth.” This may highlight why labour force mobility direction, in majority cases, leads to settling down in developed countries. Migrants choosing developed countries as their target destination for finding the job in Luxemburg, Switzerland, Liechtenstein, Germany, Sweden, Great Britain, Holland, Norway, Denmark, Austria or France etc., represent a proof of that matter.

Crescenzi et al. (2017) state that in the standard neoclassical economic framework, individuals migrate where they can best maximize their earning potential, or respecting models of cost-benefit analysis (Borjas, 1990) migrants migrate because they are rational actors seeking the best return on their investment and successful regions are those being able to offer the most competitive salaries and work conditions to potential applicants. However, Knapp and Gravest (1989) argue that many people migrate to areas of low income and high unemployment to benefit from low cost of living and available amenities (good climate, green space or culture). Crescenzi et al. (2017) also emphasise the role of social networks in the process of decision making where to relocate. Transnationalism represents the stream of advocates who perceive migration behaviour strongly influenced by networks. If we focus on social networks they cover conceptually variety of social bounds – partnering, family, parenting, friends, business network. Highly skilled workers, in our case migrants keeps strong ties not only in the country of their destination but also in the country what they left. Vetrovec (2002, p.3) defines „a migration as a proces of the network building, which is dependant on and reinforces social relationships across the space.“ Therefore, migration leads to migration and to returning migration. Highly skilled migrants represent a great value for the country of destination. (Crescenzi et al. 2017, p.604-607).

2. Labour Market Outcome of Migrants and their Integration in Global Arena

Based on the OECD figures from the research the employment rate of the migrating population in the OECD area achieved 66.4% in 2015 and a slight increase in 2016 was marked - 67.4%, out of which on average in the OECD 8.3% of foreign born workers did not have a job and 12.4% of them were without work in European OECD countries. (OECD, 2017). In the OECD countries the foreign-born workers used to

be employed in construction industry, that recently has shown a declining trend by over 20% over last seven years. In Canada and the USA the situation has been improving, low skilled migrants' unemployment rate went down by 1.8% and 4.1% respectively in 2011-2016. Employment rate in the category of older workers recovered strongly in the USA, in European OECD and in Canada by 3.6, 6.7 and 5.4 % respectively. The problems still remain in Europe, where the recovery is slower especially in migrating youth (their participation rate decrease is 10% since 2007 in the USA and European OECD countries). The problem of young unemployed is not only they are without the job but they are unemployable, they lost working habits and in many cases they are not willing to study or to obtain new or improve their old skills for some trade.

Jobs, which require routine tasks, are performed by low-skilled migrating workers, almost 47% of foreign born workers are employed in such occupations. There is a risk associated with these jobs, the work of people could be replaced by automation progress, especially in a long run perspective. The governments of the developed countries should approach the migration problem on the base of solidarity principle and make an effort to design such a policy that would ease an integration process of migrating new-comers to the society in their destination, which is certain OECD country the most frequently.

There are following policies proposed, some have already been implemented to assist integration of voluntary migrants or refugees into the society stressing the need to work or obtain the knowledge or skills being able to get involved into the labour market, policies are to be implemented in the OECD countries, Bulgaria, Lithuania, Romania and Russia:

- a) An emphasis of the policies is placed on providing customized measures for voluntary migrants and refugees.

Immigrants come from various countries, they differ in education, practical experience, they come from different economic and family backgrounds. The countries prepare integration programmes that could address the migrants/refugees' needs. It is important to organise programmes for them in order to meet the migrating labour force requirements i.e. the time, location, e.g. online learning courses; offer flexibility for workers, who can study; content what they are interested in, and also time flexibility. For instance, Belgium developed a digital platform Netbox for Dutch language training.

Language courses are principal, many states are preparing language courses for immigrants – for instance, Czech Republic formed a design of more personalised language training options, France, Latvia- created tailored-made language courses to

adjust to different tracks, with different paces of progression and variety of thematic areas, even extra classes are provided, so-called supporting classes for those who fail to pass language exam. In addition, other tasks for migrants are a) to plan introduction of supplementary courses to obtain practical skills to perform various trades, and b) to speed up their joining skilled employment group.

- b) „Work from day one“- proposed measures to help integration are adjusted to labour market needs.

It is assumed not to postpone the time of finding and getting a job, of supporting language course for immigrants. For instance, in 2016 Finland launched a trial project for 2000 immigrants to help them to become the part of labour market in 4 months, then it continues by training on the job, stressing language, culture and professional skills; Germany - offers formats of vocation training in various languages, including internship and site visits. The budget for vocational language learning in 2016 increased from 179 mil. EUR to 470 mil. EUR in 2017. Denmark - courses are organised at the workplace or after working hours, newcomers are immediately involved into working process, participate in job training when they are healthy, for those who are not ready Danish government organizes support two-year basic education scheme, combining lessons in the school and remunerated internship. Municipalities are offered an incentive of 25000 DKK (about 3400 EUR) for each migrant/refugee who starts working in 2016 or 2017. Social benefits were cut, which is compensated with the reward for taking up employment. Norway (job-related training schemes and individual integration plans are matched) or Latvia (language courses in the workplace) organise similar programmes.

- c) To organise centres where the information will be provided at one location.

Immigrants must be well informed immediately at the beginning, they should receive all essential information needed to settle, find the job, or study or in other way to get involved into the labour market and to integrate to the society in a transparent way. „The centres act as one-stop agencies and provide information and support to all recently-arrived nationals from non-EU countries, including asylum seekers. “For instance, Finland designed a smartphone application (TEMWISIT) for new immigrants guidance to be advised by public servants about various services, Sweden –“ setel.in -platform was launched for migrating workers, Germany, the Netherlands, United Kingdom, etc. Latvia (Information centres for immigrants), Estonia and Portugal (welcome guide for new arriving people).

- d) To improve coordination among stake-holders, i.e. among different levels of government, services providers and civil society associations, that oversee implementation of integration policy.

The new EU *Action Plan on Integration* was elaborated on the European level, by the European Commission. This plan covers a common policy framework and supporting measures to be used by other EU member states to develop and strengthen their national integration policies aimed at third country nationals and in addition, it assumes a more co-ordinated approach for the use of EU funds to support national integration measures: actions are planned for key areas, such as:

- i) Pre-departures and pre-arrival integration measures (international protection included);
- ii) Education, employment and vocational training;
- iii) Access to basic services;
- iv) Active participation and social inclusion.

For example, responsible ministries coordinate their activities together, e.g. Ministries of Education, of Labour, and of Children and Equality – joint strategy aimed at adult learning in Norway, similarly in Austria; in Czech Republic -a network of 12 regional support centres for coordination with local authorities, NGOs and other stakeholders to inform and advice immigrants, to get them involved into learning and training process, financed by the European Social Fund; Ireland – Social Inclusion and Community Activation Programme organized by local community development committees focused on the local guidance and training providers; Switzerland (new secretariat established for the coordination of, and quality assurance in, language training) and Greece (Ministry of Migration formed) – in both states, there is a coordination capacity strengthened at the central level by setting up central co-ordinating bodies for the management of the refugees and a secretary responsible for migration communication.

- e) To make integration process faster, adjusting the length of various programmes.

Many countries have attempted to accelerate the integration process throughout 2016, which means many countries shortened the language courses, training and made them compulsory for migrants and refugees. (France language courses are for immigrants provided by the French Office for Immigration and Integration and were reduced from 400 hours to 200 hours; Denmark: integration programme sped up from 3 years to 1 year, municipalities are committed to commence its integration training for immigrants within one month, there are shortened language and integration programmes in Latvia, Lithuania

(maximum of 12 months from previous 24 months), Finland (cut to 4 months).

- f) An ongoing trend prevails to make integration measures compulsory – a certificate of civic

integration is required by some states ((Belgium, France) or compulsory „declaration of participation“ in the Netherlands; permanent residence card after 5 years in France achieving A2 level in the language fluency, Austria introduces a new legislation proposal- a obligatory integration year for refugees or other asylum seekers, for a minimum 1 year or until migrants‘ start the job.

- g) The effort to recognise foreign educational qualification and evaluate skills of arriving immigrants, and easier access to citizenship or on the contrary, continuous trend to restrict citizenship and to introduce measures for revoking it. It is a priority on the policy agenda.

If foreign qualifications formally have been recognised it enhances the employment prospects of skilled migrants. Several countries closed contracts on bi- or multi-lateral, mutual recognition agreements (Poland, Lithuania with China) or (the Benelux countries) on mutual recognition of higher education qualifications. Australia and the Netherlands introduced provisions to strip persons involved in terrorist activities of nationality, while Portugal rejects citizenship application when the person is a suspect from terrorist activities

- h) Integration of migrating children in education, new measures and regulations were introduced also for fostering the integration of refugees and their children.
- i) to enhance the discussion about migration and integration policies with the general public.

The problems with migrants and refugees has led to refusal of migrants by general public, therefore several states created special website on migration, round-table discussions (e.g. Czech Republic: a Media Working Group on Migration. In Greece a Special Secretary to coordinate official communication and on refugee and migration policy was appointed in 2016. In Finland, The Ministry of Justice and Employment started initiative called “ Trust- Good relationship in Finland, the initiative is aimed at assisting to tackle the problems with migrants‘ discrimination, to encourage good relationship and mutual respect between refugees and Finish residents in municipalities.(OECD, 2017)

The dominating group among migrants consisted of employees in construction (38,700 persons), health and social work activities (35,300 persons) and industry (32,100 persons) in 2016. Slovak economic mobile employees work the most frequently in

construction (30,3 %), in various industrial sector (21,5 %) and in the health care and social services (18,4 %). Slovak Office of Work and Family dealing with employment registered in its system approximately 16,046 open working positions that were offered to the unemployed in 2014. At the end of 2016 open working positions offered to unemployed reached more than 35,000, more than double increase, and majority positions were in technical, moderately or highly specialised professions which are an evidence that Slovakia has a lack of specialized professions and lack of strategic job planning.

3. Foreign Working Mobility in Slovakia in Figures

A very serious signal for Slovakia is foreign working migration. The official reports on unemployment disclose a declining trend though, but, no doubt, there is a large outflow of labour force from

Slovakia. The number of persons employed *abroad* for a short term was 149800. Compared with the 4th quarter of 2016, their number declined by 3700 persons (by 2,4 %). In European countries, the most Slovak citizens were employed in Austria (55600 p.) and in the Czech Republic (35100 persons).

The most citizens working abroad were from Prešov's county (34500 persons), Žilina's county (25100 persons) and Nitra's county (24200 persons). The number of persons employed abroad decreased in four regions, the most significantly in Prešov's county (by 8,1 %). The number of persons employed abroad decreased in four regions, the most significantly in Prešov's county (by 8,1 %). On the contrary, it increased the most in Nitra's county (by 8,2 %). (SUSR, 2017). Comparing results of the year 2016 we may conclude that the ranking of the top two is unchanged, the most migrating citizens were from Presov also in 2014, followed by Žilina. (see table 1).

Table 1. Foreign labour mobility-outflows for Slovak counties in 2014.

County	Slovak Labour Force working abroad In persons	Proportion of employees abroad compared to overall total employment in Slovakia (in %)
Prešov's county	36100	11,1 %
Žilina's county	23600	8,1 %
Nitra's county	23100	7,5 %
Banská Bystrica's county	16500	6,0 %
Košice's county	15500	4,9 %
Trenčín's county	8600	3,2 %
Bratislava's county	5900	1,9 %
Trnava's county	4800	1,8 %

Source: Adapted from Statistics Authority of the Slovak Republic, 2015

The most significant reasons to leave Slovakia and seek the job abroad are economic reasons, to improve financial situation and family reunion. From our sample of 240 questionnaires, firstly, 90% of respondents mentioned bad economic reasons and the goal of improving financial conditions as the cause of their decision to work abroad; and secondly, the family integration, the natural desire for family being together is the consequence of the responds with the second highest percentage -78%; but, on the other hand, what is even more alarming is their decision to live in a new country, which has provided them with the work and attractive social advantages.

Living costs in Slovakia are fairly high and the level of wages low, especially for the employees with the basic education or with low skills or none skills. (Kajanová, 2015). Slovak citizens (in the sample) usually choose as their destination countries especially Czech Republic and Austria, the closest countries to

Slovakia. Therefore, the over-borders employment, especially in Austria is very frequently occurring, Slovak nurses create the most numerous group of Slovak workers providing social and health care to ill and elderly Austrian people. A relatively large group of Slovaks work as seasonal workers in tourism (restaurants and hotels). In 2014 the most of Slovak citizens worked in Austria (39000) and in the Czech Republic (37000).

In 2016 the dominating group among migrants consisted of employees in construction (38700 persons), health and social work activities (35300 persons) and industry (32100 persons). Slovak economic migrants work the most frequently in construction (30,3 %), in various industrial sector (21,5 %) and in the health care and social services (18,4 %). Slovak Office of Work and Family which deals with employment registered in its system approximately 16046 open working positions that

were offered to the unemployed in 2014. At the end of 2016 open working positions offered to unemployed reached more than 35000 and majority positions were in technical, moderately or highly specialised professions which are an evidence that Slovakia has a lack of specialized professions and lack of strategic job planning.

Table 2 shows in percentage the number of the EU free movement immigrants compared to the EU total

number of the permanent immigrants inflowing to the EU in 2007-2015. The period before financial crisis proves there was a lot of labour force mobility within the EU (48,2%) in 2007, which later declined by 6% and hit the bottom at 39,5% - share in 2009, since then the share of EU free movement of labour force has been increasing reaching 55,7% share in 2014 and the following year the drop to 53,2% is seen.

Table 2. Inflows of permanent immigrants into the EU, 2007 -2015

Inflow of immigrants	2007	2008	2009	2010	2011	2012	2013	2014	2015
All countries	4460300	4201600 -5,80%	3927200 -6,53% -12,05	3846100 -2,07% -13,8%	3823600 -0,59% -14,3%	3847000 0,61% -13,8%	3930500 2,17% -11,9%	4113000 4,64% -7,8%	4322100 5,08% -3,1%
EU total	2601100	2249100 -13,53%	1985600 -11,72% -23,7%	1959500 -1,31% -24,7%	1924300 -1,80% -26,0%	1940500 0,84% -25,4%	2003400 3,24% -23,0%	2180600 8,84% -16,2%	2336700 7,16% -10,2%
EU free movement	1254000	965000 -23,05%	784800 -18,67% -37,4%	800700 2,03% -36,1%	897100 12,04% -28,5%	1006900 12,24% -19,7%	1045500 3,83% -16,6%	1215000 16,21% -3,1%	1243200 2,32% -0,9%
EU free movement/ EU total	48,2%	42,9%	39,5%	40,9%	46,6%	51,9%	52,2%	55,7%	53,2%

Source: Adapted from (OECD, 2016); (OECD, 2017)

Table 3. Inflows of permanent immigrants from V4 Group countries into the EU, 2007 -2015

Inflow of immigrants	2007	2008	2009	2010	2011	2012	2013	2014	2015
CR	14800	16500 11,5	14400 -12,7	12700 -11,8	8200 -35,4	2900 -64,6	2500 -13,8	2400 -4,0	380 -84,2
SR	100600	76200 -24,3	38200 -49,9	28000 -26,7	20700 -26,1	28600 38,2	27800 -2,8	38500 38,5	31600 -17,9
HU	22600	35500 57,1	25600 -27,9	23900 -6,6	22500 -5,9	20300 -9,8	21300 4,9	26000 22,1	25800 -0,8
PO	40600	41800 3,0	41300 -1,2	41100 -0,5	41300 0,5	47100 14,0	46600 -1,1	32000 -31,3	86100 169,1

Source: Adapted from OECD, 2016); OECD, 2017

3.1 Temporary migration

Temporary labour migration covers various types of movements, such as intra-European mobility of workers, postings, cross-border work, temporary work, seasonal workers connected with agricultural activities and non-agricultural activities (hotels, touristic services, catering, other tourist related service.

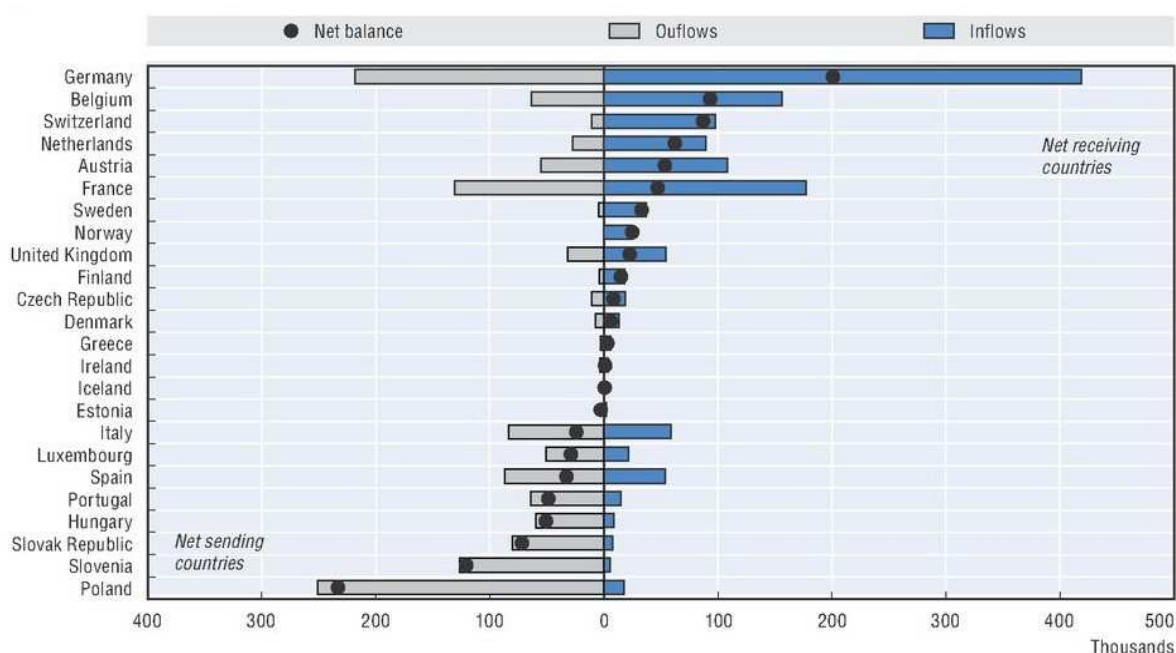
As seen in the figure 1 Slovakia is 3rd net sender of people to the countries of EU, with Poland leading this group, 3rd Slovenia and 4th Hungary. Almost all V4G countries, except for Czech Republic which belongs to group of net recipients of workers, this

group is led by Germany, Belgium and Switzerland. Not all Slovak labour force working abroad are absolutely content, in spite of being far from the home, they are in contact with the family and friends, they are adaptable to new multicultural conditions and accept willingly requirements and conditions in order to work abroad. The estimated number of Slovaks working abroad is about 300,000. Fairly high number of Slovaks study in foreign countries, approximately 30,000 students. Slovakia as a host country is not so popular for migrants because of not being able economically to offer rich social benefits and allowances what migrants especially are seeking. Nowadays the ability of the states to accept working migrants can be measured utilizing more criteria, such

as social allowances, security, religion tolerance etc. Slovakia is net sender of workers to the EU, see Fig.

1, in appendix shows the development in 2014 for comparison).

Figure 1. Net recipients and net senders of workers in 2015



Source: Adapted from OECD, 2017

Conclusion

National legal systems in the area of labour law are harmonized as a consequence of the EU legislation. The agency EURES assists with the employment policy to a large extent. Freedom of the mobility has a positive impact on individual economics of the EU member states, their migrating citizens earn and save financial resources and invest in a domestic state, or help their families living in their home countries. For instance, the advantage of Slovakia, which is a member of the Eurozone, is that migrating employees from Slovakia within the European Union and Eurozone financially do not lose due to changes in foreign exchange rates. But countries out of the Eurozone do not have this advantage. This fact may be the incentive for countries and their governments to accomplish this goal “of becoming the Eurozone member” by fulfilling Maastricht criteria, however the present economic situation and migrants’ crisis have slowed down the process of enlarging the Eurozone. Foresti, Marani a Piroli (2015, p.3) found out in their research made in Hungary, Czech Republic, Bulgaria and Romania that “the potential accession of the new member states may increase the level of fiscal indiscipline in the Eurozone.”

To manage labour migration when the EU faces challenges in the area of an extreme labour mobility,

there is an enormous need for any possibility of job creations, the crucial task lies on the EU member states and OECD countries and Asian countries:

- To enlarge labour market, job quality, create job opportunities the capability of mobilizing ideas of various teams preparing projects that will assist with and tackle the problems that have arisen, problematic behaviour of numerous migrants is a big obstacle of the effort being made by EU member states.
- To get to know historical and cultural background, achieve mutual understanding, teaching the cultures foundation of the recipient country in the course organized by municipalities.
- Large corporations may offer certain job positions, but they usually have special requirements for the qualified labour force. SMEs, social businesses, charity organizations may contribute to creating work positions, especially for non-qualified labour force.

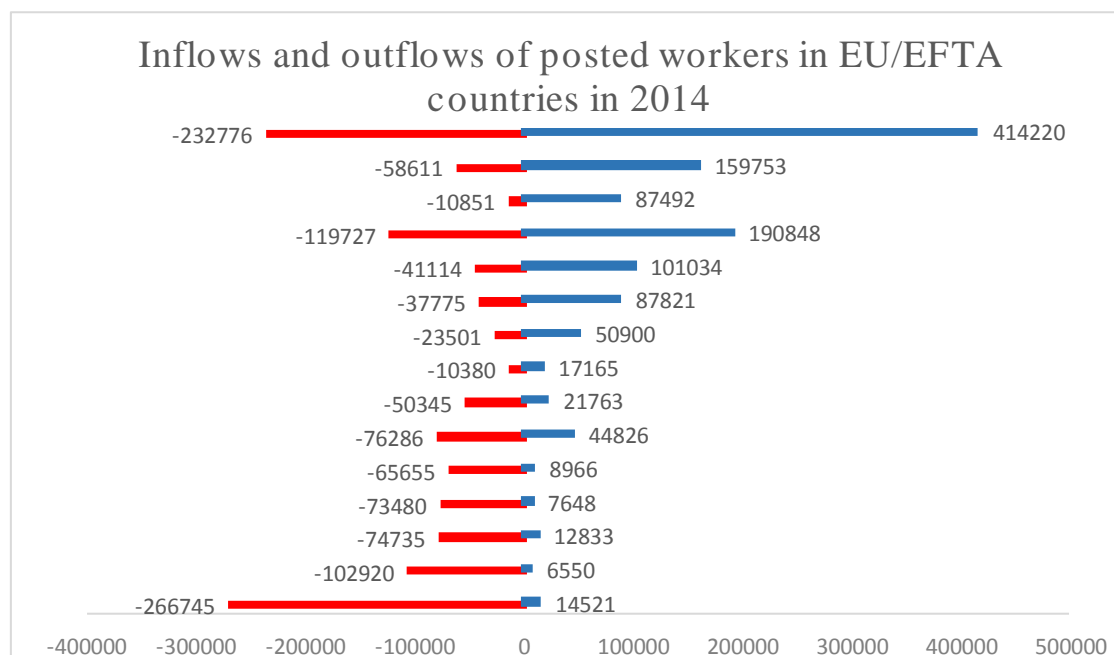
The mentioned problem is very actual and raises questions for new research because migrants receiving social benefits access to permanent residence may result in dissatisfaction not only of domestic citizens living in the poverty conditions and leading to supporting extremism moods.

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Appendix:**Figure 2. Net recipients and net senders of workers**

Legend: Negative numbers are outflows/ positive numbers represent inflows of people to the country.

Net recipients: From the top: 1. Germany (414,200 recipients), 2. Belgium, 3. Switzerland, 4. France, 5. Austria, 6. the Netherlands, 7. UK, 8. Czech Republic (17,165)

Net senders: 9. Luxembourg (-50,345 senders), 10. Spain, 11. Hungary, 12. Slovakia, 13. Portugal, 14. Slovenia, 15. Poland (-266,745 people).

The countries in figure 2 in the order: 1. Germany, 2. Belgium, 3. Switzerland, 4. France, 5. Austria, 6. the Netherlands, 7. UK and 8. Czech Republic are states who receive more workers from abroad than they send workers abroad, unlike the states 9. Luxembourg, 10. Spain, 11. Hungary, 12. Slovakia, 13. Portugal, 14. Slovenia and 15. Poland.

Source: Adapted from OECD, 2016

THE EVALUATION OF ECONOMIC BENEFITS FROM MIGRATED LABOUR IN V4 COUNTRIES

Magdaléna TUPÁ

Abstract

This given study deals with the issue of economic benefits from migrated labour forces in V4 countries, the importance of managing migration flows appropriately, which may significantly influence the economic development of a country by increasing labour productivity, the demography in development and sustainability of retirement systems. Based on statistical data and mathematical calculations it introduces an evaluation system of economic benefits from immigration in V4 regional labour markets as well as the selected macro-economic indicators as introduced. Moreover, it shows the saved costs on education and profession preparation of such labour force and the incomes from GDP or VAT produced by immigrants. In conclusion, it evaluates the balance of benefits and shows a further profit from saved costs on health and social care, childcare while preparing for a profession, incomes from income and consumption taxes, but also payments to social and health insurance agencies from immigrant salaries. A crucial benefit from labour force immigration is that it has a significant development potential in both the economy and society.

Key words

Immigration, labour migration, work force, labour market, V4 region

JEL Classification: F22, F23, F24

Introduction

Labour migration has become an economic and social phenomenon for V4 countries after the fall of Communism. Regarding Slovakia and the Czech Republic, it has been a phenomenon since 1993. After their accession to the EU in 2004, countries have started to perceive it as a problem. Other important milestones are the accessions of other countries to the Schengen area and the expiration of temporary actions that protect the labour markets of the original integrated member states in Europe. Over a long period V4 countries have evinced the character of a source country in regards to migration. High unemployment rates, low wages and the slow pace of creating job vacancies are all factors which push the home workforce (migration theory of push and pull factors) (Blanchflower, Shadforth, 2009). After overcoming the economic crisis in 2011, persistent economic growth has become evident in an increasing workforce demand. For the last two years, workforce demand has been so high that it is impossible to meet the workforce demand with the country's own resources. This record high includes people who do not want to work, the long – term unemployed and those who have lost their working habits and therefore are unemployable. For several years the labour market in Slovakia, similar to other European countries, has experienced a significant lack of highly skilled employees, primarily IT technologists, technical and constructional technologists within engineering and

electrotechnical industry, as well as, doctors and nurses (Adepoju, Van Noorloos, & Zoomers, 2010). Nowadays, there is a lack of skilled and unskilled labourers in the production and service industries. The Slovak Republic has exercised a purely formal approach in relation to migration – the acceptance of Conception of integration of foreigners in Slovakia (2009, 2011), the Migration policy of SR with the prospect till 2020 (2011) or minor changes in the field of foreign employment from third-world countries. Representatives of the policies declared an anti-migration approach in 2015 in connection with the migration crisis in Europe. Economic development during the last year compels the expert and laic public to change the point of view of migration. The administrative obstacles and the complex process of employing foreigners from third-world countries opens an area for immigration from poorer countries of European Union, where there is a level of wages deeply under the average of Slovakia. The saturated demand in the workforce by way of migration opens the questions in the political, expert and laic sphere which have been overlooked up until now. It requires a thorough analysis and examination with the aim of knowing the pros and cons of work migration from each member country within the European Union, as well as, third-world countries. Only by knowing both the motives and the consequences, it is possible to effectively manage the migration fluxes in a country.

The main goal of this study is to find out the influence of migration on selected macroeconomic

indicators and evaluation of economic contributions of work force migration on the target countries which are V4 countries, by means of correlation and regression analysis.

The realization of this goal requires:

- Selection of economic evaluation indicators from labour emigration
- Processing time-lines for the selected indicators
- Processing of correlational matrixes and consecutive regression analysis of the influence of immigration and GDP
- Evaluation of economic contributions of labour immigration in V4 countries

Goal and Methodology

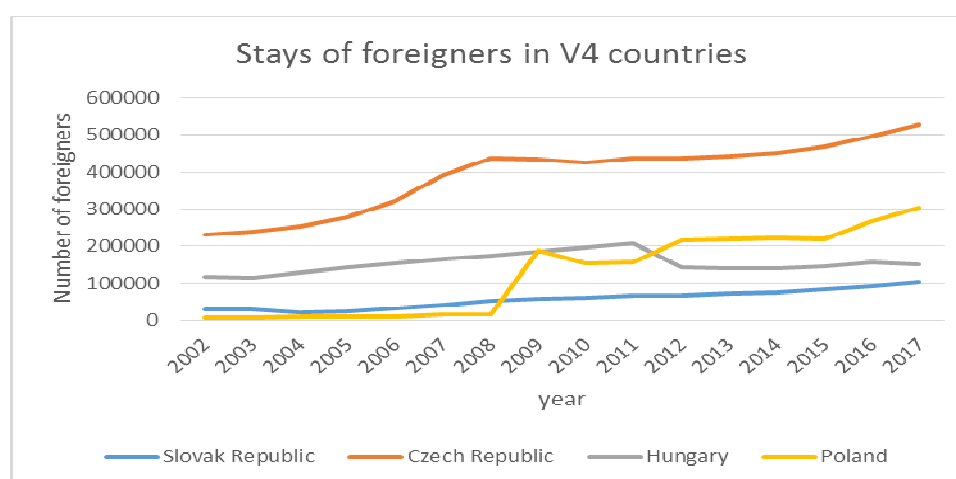
The calculations used in this study are based on accessible statistic data of Eurostat, WTO and national statistics published by Statistical offices in V4 countries. The scientific methods as an induction, deduction, abstraction, comparison, analysis and synthesis of selected factors, phenomenon and processes were used in this study. The mathematical-statistical methods (regression and correlation analysis) and other auxiliary calculations were used in order to recalculate the data.

Bases of evaluation of the immigration and GDP in V4 countries

Labour immigration represents the work-force coming from abroad to another country with the aim of finding a job based on intellect or manual labour (Andrijasevic, Sacchetto, 2016). Work performance assumes gaining the knowledge, developing the skills and gaining the skilfulness during the process of education and preparation for an occupation. Thanks to labour immigration, a country gains prepared work force in the productive age and foreigners are willing to work for an offered wage without any costs (Kazlauskienė, Rinkevičius 2006; Daugeliene, 2007; Lee, 2008). With the retirement age in mind, assuming it will be 65, an immigrant will produce the added value for approximately 35 – 40 years for such target country (based on average age of immigrants coming to V4 countries). The immigrant will pay income taxes, levies to the health and social insurance, increase the consumption and pay indirect taxes in the price of goods. In case of staying in the country and starting a family, the immigrant represents a reproductive potential. These are the most significant economic benefits of immigration (Cekanavicius, & Kasnauskienė, 2009).

In the past, Slovakia, much like other V4 countries, was originally an emigration country – meaning citizens left Slovakia due to various reasons. More significant changes came up in 2004 with the accession of countries to the European Union to A8 as it is called and the accession of countries to the Schengen area.

Graph 1. Development of the valid stays for foreigners in years 2009 – 2017 in V4 countries



Source: Eurostat

The highest number of foreigners with a permission for staying in the Slovak Republic in 2017 was 104451, representing 1.92% of the population. Since 2004, when the Slovak Republic accessed to the European Union, the number of legal immigrants has

increased nearly fivefold. In spite of this positive development, Slovakia has the fifth lowest share of foreigners from the countries in the European Union. After Slovakia, in succession there are Bulgaria, Croatia, Lithuania and Romania with the share is not

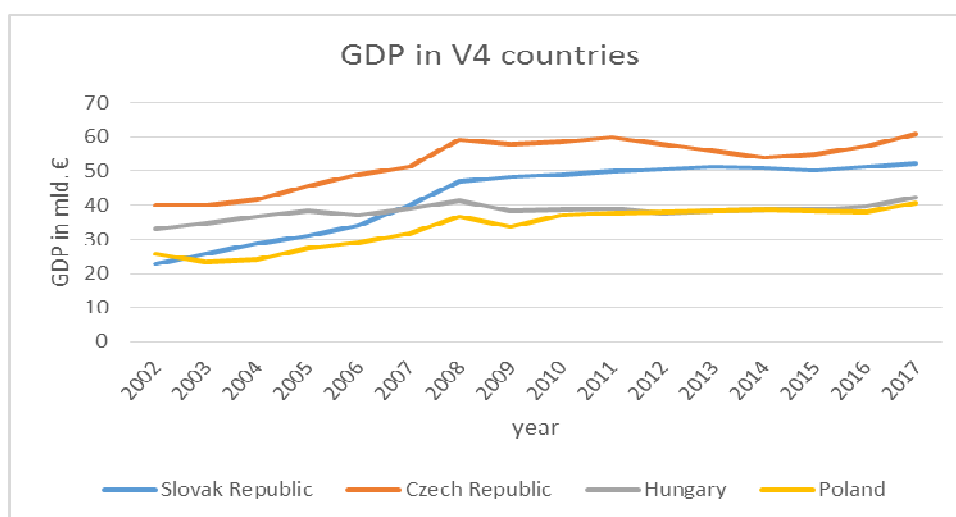
even 1%. The Slovak Republic is a target country for the citizens in neighbouring countries, which might be a result of the deeper working, family and other social connections. Immigrants from the Czech Republic, Hungary, Poland and Austria comprise 45% of the total number of immigrants in Slovakia. Another significant group is made up of citizens from the South-European countries, mainly Romania, Bulgaria and Serbia. An incentive for these citizens to immigrate is primarily employment.

In accordance with a citizenship of migrants from the third-world countries, most came from Ukraine, Serbia and Russia. Other countries include Vietnam, China, Korea, Iran, Macedonia, The United States and Turkey.

The course of the number of foreigners who stay in the Czech Republic continues to rise, but in Hungary, it is decreasing. Poland has recorded the most significant increase as foreigners have shown the biggest interest in this country. By monitoring the monthly increase of work migrants, we found out that in the Czech Republic there was a rapid increase of immigrants during the last months. At the same time, workers from Ukraine, Serbia, Bulgaria and Romania are on the front burner.

Immigrants in the target country produce an added value – appraised as a percentage when speaking about GDP (graph 2), which represents the number of goods and services that are produced in a country in one year.

Graph 2. Development of GDP in years 2009 – 2017 in V4 countries



Source: Eurostat

The most significant increase of GDP records is the economy of the Czech Republic, afterwards Slovakia. Development of GDP in Poland and Hungary has a mild increasing tendency.

The relation between immigration and selected macroeconomic indicators

To find out the connection, we chose GDP as the main macroeconomic indicator, which shows the number of goods and services produced in a country over one year. Development of this indicator in a time-line represents the condition of the economy in

the given country. We consider employment, unemployment and job vacancies in order to appraise a situation in the labour market. According to economic theories, the unemployment and lack of job vacancies in a country of origin are important pull factors in the process of making a decision of a potential migrant. Supply and demand for work in the labour market determine the stature of wages. Empirical research shows the most important incentive for a person to migrate abroad for work is right the wage level (Vojtovič et al., 2016). Given macroeconomic indicators were subjugated to correlational analysis.

Table 1. A correlational matrix of immigration and selected macroeconomic indicators in Slovakia

	GDP	employment	unemployment	immigrants
GDP	x			
employment	0,23632	x		
unemployment	-0,68011	-0,32419	x	
immigrants	0,88501	0,63352	-0,68444	x

Source: own processing, Excel

Data: Eurostat

* significance level $\alpha = 0,05$

The correlation matrix of dependents in the selected economic indicators and immigration during the examined years 2002 – 2017 for the Slovak Republic (table 1) reveals a very strong dependence on the immigrants in the correlation with GDP. Immigrants participate in the production of GDP. The higher the growth of GDP in a country, the more

attractive it is for other potential immigrants to immigrate and thus the pull factor for GDP is stronger. There is a great dependence on the correlation between immigrants and employment and a strong negative correlation between immigrants and unemployment.

Table 2. A correlation matrix of immigration and selected macroeconomic indicators in the Czech Republic

	GDP	employment	unemployment	immigrants
GDP	x			
employment	0,40752	x		
unemployment	-0,59566	-0,69375	x	
immigrants	0,94458	0,64637	-0,74302	x

Source: own processing, Excel

Data: Eurostat

* significance level $\alpha = 0,05$

The correlational matrix of immigration and selected macroeconomic indicators in the Czech Republic in an examined period (table 2) reveals almost perfect dependence between immigrants and GDP. Strong dependence is examined as well between immigrants and employment, which means the more

immigrants come to the country, the higher the employment rate is. There is a strong negative dependence between immigrants and unemployment, which is contrary to the dependence between immigration and employment.

Table 3. A correlation matrix of immigration and selected macroeconomic indicators in Hungary

	GDP	employment	unemployment	immigrants
GDP	x			
employment	0,57870	x		
unemployment	0,02313	-0,45532	x	
immigrants	0,63439	0,96062	-0,44806	x

Source: own processing, Excel

Data: Eurostat

* significance level $\alpha = 0,05$

Examination of selected indicator dependencies in Hungary (table 3) reveals nearly an absolute dependence between the number of immigrants

coming to the country and employment and a mean value of dependence with unemployment. There is a strong dependence between immigrants and GDP.

Table 4. A correlation matrix of immigration and selected macroeconomic indicators in Poland

	GDP	employment	unemployment	immigrants
GDP	x			
employment	0,73305	x		
unemployment	-0,91034	-0,59456	x	
immigrants	0,84000	0,91498	-0,72240	x

Source: own processing, Excel

Data: Eurostat

* significance level $\alpha = 0,05$

In Poland (table 4), there we can see almost complete dependence between immigrants and employment, a very intense positive dependence in regards to the number of immigrants on GDP. There is a strong negative correlation dependence between immigrants and unemployment.

It is important to look into the dependence between immigrants coming to V4 countries and macroeconomic indicator GDP using the regression analysis because there is a very high level of correlational dependence in every examined country. The number of immigrants is an independent variable X and GDP per inhabitant is a dependent variable Y. Assuming that the higher number of work immigrants contributes to the production of a higher added value which means the increase of GDP.

The regression function for the Slovak Republic is $y = 0.000362x + 21.87$. It means, if the number of foreigners in Slovakia was 0, the GDP would represent the value of 21.87 billion € (value Intercept – b₀). If the number of foreigners increases by 1, the GDP would increase by 36.2 thousand € (value X Variable 1). The p-value for the locating constant is $7.71 \cdot 10^{-6}$ which is <0.05 and the regression coefficient is $5.23 \cdot 10^{-6}$ which is <0.05 . The regression coefficient and the locating constant also express the statistical significance of the chosen dependence. The correlation coefficient is 0.885 and the determinative coefficient is 0.7832. The significance F is smaller than the significance level α ($5.23 \cdot 10^{-6} < 0.05$). The model is on the basis of F-test statistically significant and selected correctly.

The regression function for the Czech Republic is $y = 0.0000719x + 24.52$. Meaning, if the number of foreigners in the Czech Republic were 0, the GDP would represent the value of 24.52 billion € (value Intercept – b₀). If the number of foreigners increases

by 1, the GDP would increase by 71.9 thousand € value X Variable 1). The p-value for the locating constant is $2.94 \cdot 10^{-7}$ which is <0.05 and the regression coefficient is $3.72 \cdot 10^{-8}$ which is <0.05 . The regression coefficient and the locating constant also express the statistical significance of the chosen dependence. The correlation coefficient is 0.9446 and the determinative coefficient is 0.8922. The significance F is smaller than the significance level α ($3.72 \cdot 10^{-8} < 0.05$). The model is on the basis of F-test statistically significant and selected correctly.

The regression function for Poland is $y = 0.0000442x + 28.07$. Meaning, if the number of foreigners in Poland were 0, the GDP would represent the value of 28.07 billion € (value Intercept – b₀). If the number of foreigners increases by 1, the GDP would increase by 44.2 thousand € (value X Variable 1). The p-value for the locating constant is $2.66 \cdot 10^{-12}$ which is <0.05 and the regression coefficient is $4.66 \cdot 10^{-5}$ which is <0.05 . The regression coefficient and the locating constant also express the statistical significance of the chosen dependence. The correlation coefficient is 0.84 and the determinative coefficient is 0.7056. The significance F is smaller than the significance level α ($4.66 \cdot 10^{-5} < 0.05$). The model is on the basis of F-test statistically significant and selected correctly.

The regression function for Hungary is $y = 0.0000946x + 34.88$. Meaning, if the number of foreigners in Hungary were 0, the GDP would represent the value of 34.88 billion € (value Intercept – b₀). If the number of foreigners increases by 1, the GDP would increase by 94.6 thousand € (value X Variable 1). The p-value for the locating constant is $5.16 \cdot 10^{-14}$ which is <0.05 and the regression coefficient is 0.0083 which is <0.05 . The regression coefficient and the locating constant also express statistical significance of the chosen dependence. The

correlation coefficient is 0.6344 and the determinative coefficient is 0.4025. The significance F is smaller than the significance level α ($0.0083 < 0.05$). The model is on the basis of F-test statistically significant and selected correctly.

Discussion

V4 countries seem to be anti-migration oriented due to their migration policy, which is patterned on the historical, cultural and political context. The approach to immigrants has not changed in spite of integrated processes examining what countries have gone through during the last three decades. Macroeconomic indicators in the period of transformation pointed out the tough economic situation in which the countries were found. High unemployment rates, the small number of job vacancies, low rates of creating new job vacancies, low wages and so on, are rather push factors for immigrants, not something attractive. There has been a better economic situation in V4 countries thanks to the development of these countries, but in comparison to other European Union countries, Slovakia is still behind. This trend has considerably left its mark on the development of immigration, which has significantly improved during the last ten years and the number of work immigrants is radically growing. Economic growth, creating new job vacancies and lack of labour force account for a pressure on politicians so that they change the approach to immigration and simplify the rules of employing immigrants. Nowadays, it makes no sense of protecting the labour market as much. By not meeting the demand for labour force causes deceleration of economic growth and threatens its long-term sustainability.

On one hand, the significant benefits of immigration are apparent when countries without costs, profit from a prepared work-force. Labourers come to these countries in need of work and thus produce an added value which affirms the results in the correlation and regression analysis. Migration from Western European countries mostly presents a qualified work-force coming to V4 countries with foreign investments in an enterprise, occupy jobs where a higher added value is produced. Work migration from the countries in Southern and Eastern Europe is a benefit for V4 countries in respect to saved funds for education and preparation in a profession, as well as the health and social insurance provided during their education and job preparation. Although they are employed in lower work positions, creating a lower added value. The immigrants occupy job vacancies which could not be occupied by the

home labour force due to the lack of interest in such work, low provided wages or insufficient qualifications.

Countries should create such a migration policy that would stabilize the home labour market situation by managing migration in accordance with the needs of their economies.

Conclusion

The evaluation of work migration consequences testifies to the lack of exact data and statistics concerning the extent and intensity of work migration, the causes and motives for immigrants to immigrate and the social and demographic statistics about immigration not just in V4 countries but also in other European Union countries. The missing data would enable a deeper examination. On the basis of the thorough analysis, it would be possible to create approaches to control the migration with the idea of maximising the benefits and minimising the losses for the society of each country.

The consequences of work immigration from European Union countries are in favour of the benefits. With a prepared skilled work-force without any costs in the age of producing the highest added value, is a huge benefit for the country, especially when these same immigrants would pay income taxes, VAT and other indirect taxes, thus increasing the consumption in the country of origin and stimulating the economy by means of the multiplier effect. With the right approach to migration policy and the coordination of immigration, it is possible to a certain extent, to minimise the losses and maximise the benefits of work immigration. In order to keep the sustainable economic development, it is necessary to fill job vacancies which cannot be filled by the home work-force.

The only economic point of view regarding the consequences is not sufficient because it does not provide a complete concept of all the consequences for a country and its society. The complexity of this given issue requires an evaluation of social aims and other factors of society from a human, moral, psychological, cultural or demographic point of view.

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LEADERSHIP THEORIES AND COMPETENCIES IN PROPERTY VALUATION SECTOR

Rusnė JEGELAVIČIŪTĖ, Mykolas NAVICKAS, Valentinas NAVICKAS

Annotation

Globalization, new technologies and their development have had a significant impact on the competitive environment, requiring managers who can properly solve the challenges they face. According to the authors of the scientific literature, a modern approach to organizational management emphasizes the need not only for managers with management potential. Increasing emphasis is placed on leadership development at all levels of the organization, with particular emphasis on the effective use of human resources, a source of key competitive advantage for organizations. Leadership due to ambiguous treatment is the subject of contemporary scientific discussions. The scientific theories developed to explain the phenomenon of leadership often emphasize its essence and importance in organizational management, which plays a decisive role in ensuring the efficiency of individual people, teams and organizations in relation to high posts or duties. Since only the qualifications and leadership skills of all employees can depend on successful management of the organization at any level of management, the authors seek to analyse literature related to leadership and to determine the main leadership competences.

Key words

leadership, competencies, organization, competence development

JEL Classification: O15, D61, D60

Introduction

Many researchers are trying to define the concept of leadership excellence and its importance for the organization. The current vector of leadership competencies research is aimed at identifying leadership competencies of both the manager - leader and any employee in the organization - and identifying the impact of these competences on the organization's activities. Researchers develop leadership in a variety of cross-sections. Some of their leadership is analysed by accentuating leadership behaviour and qualities, others emphasize the leadership's vision, values and the ability to motivate oneself and others to change.

Leadership due to ambiguous treatment is the subject of contemporary scientific discussions. The scientific theories developed to explain the phenomenon of leadership often emphasize its essence and importance in organizational management, which plays a decisive role in ensuring the efficiency of individual people, teams and organizations in relation to high posts or duties. However, leadership is not only a leader, but also an individual, regardless of the position he or she has (Šilingienė, V., 2011).

Since only the qualifications and leadership skills of all employees, at any level of management, may depend on the successful organization of the organization, it is relevant to find out which

leadership competences are most important and how they are expressed in different levels of the organization's management and analyse them in the context of the entire organization.

According to Petkevičiūtė and Kaminskytė (2003) it is believed that only successful organizations that recognize the importance of human resources tend to invest in the application of the structures of excellence.

Today leaders in organizations focus on production. The function of personnel management in many property valuation companies is not sufficiently developed, in this context, it is useful to analyse leadership theories and to determine required competencies in property valuation sector.

Research tasks:

1. To analyse scientific literature, to analyse the concept of leadership.
2. To analyse and determine leadership competencies required in property valuation profession.

Leaders in property valuation sector

Real estate plays an important role in the national economy. The great role of real estate is associated with other areas, which are closely related to the development of the entire country economy. Correct

valuation of real estate is very relevant for the banking sector, insurance and leasing companies, as well as for the construction sector, asset selling agencies, real estate registry offices, as well as people who buy and sell their own real estate. Property appraiser must be highly qualified, have extensive experience and be able to correctly assess all information related to real estate (Galiniene, B.; Statkevičienė, L., 2001). Real estate assets demarcate a substantial part of the accumulated wealth of modern economies and of individual households. The real estate market is also an essential element within the overall market system. It relates closely to financial markets where on the one hand loans for real estate investments are a major product and, on the other hand, real estate is an important form of security (Herath, S.; Maier, G. (2015).

Real estate valuation is important both for private individuals and business development for the state itself. Therefore, the role of a professional valuer is also gaining ground in real estate transactions. The basic requirements for a professional property appraiser are impartiality, objectivity, knowledge of the fundamentals of property valuation. All this determines the quality of the appraiser decisions (Aleknavičius, A., 2007).

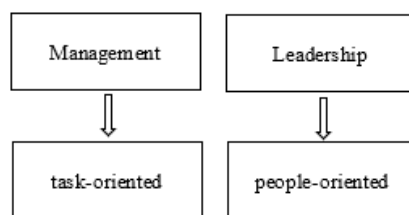
The appraiser, being responsible for the appraiser assistants and the entire team, must have appropriate leadership competencies to ensure effective work in the company.

Literature review of leadership theory

The simple truth behind leadership has been known probably for centuries. The oracle's advice in ancient Delphi says "Know thyself", this is known as a basic principle in leadership. In order to lead others, you must be capable to lead yourself. It was recognized by Aristotle, who talked about the "virtuous activity of the soul", and it was developed further by the Stoic philosophers in classical antiquity. Also, the Christian monastic orders perfected various methods for learning, how to channel one's thoughts and desires. Ignatius of Loyola rationalized them in his famous spiritual exercises. All these methods focus on attempting to free consciousness from the domination of impulses and social control (Seamanlike, P. 2003).

Management and leadership - one of the most relevant research topics since the fourth the last decade of the century. The word "leader" itself is a relatively new derivative in English, which appeared 200 years ago and began to be used in terms of political influence in the British Parliament (Skaržauskienė A.; Paražinskaitė G., 2010). Traditionally we differentiate management and leadership. They are two paths of leading, which have many similarities, but also many differences. Both involve influencing, working with people and effective goal accomplishment.

Fig 1. Management and leadership orientation



Source: Sydanmaanlakka, P. (2003)

Leadership is actually a very old discipline, which can be traced back to Plato and Aristotle. Management as a discipline emerged around the turn of the 20th century with the advent of our industrialized society.

According to Silva (2016) that despite the fact that leadership continued to be defined as a personal quality, after World War II a new trend started. Stogdill (1950) defined leadership as "the process of influencing the activities of an organized group in its efforts toward goal setting and goal achievement". This was perhaps the first effort to point out that

leadership was not a mere individual trait but a process of influence upon others. Stogdill also defined the purpose of that process: "goal setting and goal achievement"

According to Masiulis and Sudnickas (2008), the differences between executives and leaders show that leaders can be not only certain positions or people who play a certain role, but the rank of any rank (from the lowest to the highest) can be a leader (Masiulis, Sudnickas, 2008). To summarize, the essential difference between a leader and a manager can be attributed to the fact that the leader is fully confident,

and the leader himself focuses not on the functions but on the person. The focus of the leader is man. In this way, a leader could be any employee of the company with leadership competences, regardless of occupied functional responsibilities. Some theorists believe that leadership is no different from the social influence

processes occurring among all members of a group and others believe that leadership is everything someone is doing in order to lead effectively (Bohoris; Vorria, 2007).

According to Kotter (1990), leaders play three roles (Sydanmaanlakka, P., 2003):

Fig 2. Forces dominating business



Source: Sydanmaanlakka, P. (2003)

Leadership is one of the most discussed topics in the social sciences (Bass, 1991; Avolio, Sosik, Jung, Berson, 2003; Bennis, 2007). The studies of leadership started with the search of differences among leaders and the pursuit to explain the concept of a leader (Galton, Eysenck, 1869). The subsequent studies intend to demonstrate how individual characteristics, skills, personal properties affect the efficiency of a leader (e.g., Eagly, Karau, Makhijani, 1995; Judge, Bono, Ilies, Gerhardt, 2002; Judge, Colbert, Ilies, 2004; Mumford, Campion, Morgeson, 2007). Author states that: first, leadership is a universal multilevel phenomenon (in all cultures and in all times); second, the theory and practice of leadership covers many levels, therefore a detailed analysis is necessary; third, our perception of leaders and leadership is infinite, a continuous scientific quest characterised by theories and empirical studies on leaders of the new generation (Day, Antonakis, 2012).

Globalization and the development of innovative technology have made a significant impact on the competitive environment, therefore leaders who can properly deal with the arisen challenges are required. Some theories provide that leaders are born (*Great Man Theory*), others state that each individual has the opportunity to evaluate his/her leadership potential (*Trait Theory*), the third ones claim that leaders are grown (*Behavioural Theories*), another ones emphasize that the leader's behaviour depends on the situation (*Situational Leadership*), focus on the forecast of the most appropriate or efficient style of leadership in particular circumstances (*Contingency Leadership*), stress the relationship between the leader and his followers (*Transactional Theory*), distinguish the role of leadership in changing conditions implementing the transformation of activities of the

organization (*Transformational Theory*). Whilst early theories tend to focus upon the characteristics and behaviours of successful leaders, later theories begin to consider the role of followers and the contextual nature of leadership (Bolden, R., Gosling, J., Marturano, A. and Dennison, P.):

- *Great-Man Theory*- Based on the belief that leaders are exceptional people, born with innate qualities, destined to lead. The use of the term 'man' was intentional since until the latter part of the twentieth century leadership was thought of as a concept which is primarily male, military and Western. This led to the next school of Trait Theories.
- *Trait Theory* - The lists of traits or qualities associated with leadership exist in abundance and continue to be produced. They draw on virtually all the adjectives in the dictionary which describe some positive or virtuous human attribute, from ambition to zest for life.
- *Behaviourist Theories* - These concentrate on what leaders actually do rather than on their qualities. Different patterns of behaviour are observed and categorised as 'styles of leadership. This area has probably attracted most attention from practising managers.
- *Situational Leadership* - This approach sees leadership as specific to the situation in which it is being exercised. For example, whilst some situations may require an autocratic style, others may need a more participative approach. It also proposes that there may be differences in required

leadership styles at different levels in the same organisation.

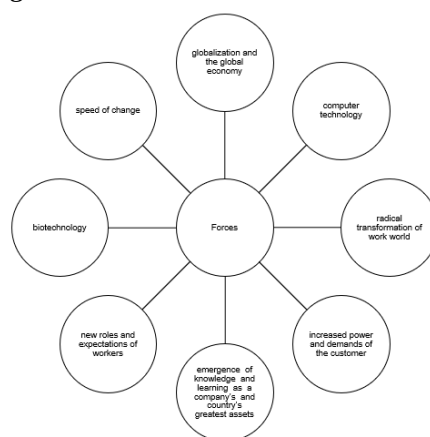
- *Contingency Theories* - This is a refinement of the situational viewpoint and focuses on identifying the situational variables which best predict the most appropriate or effective leadership style to fit the particular circumstances.
- *Transactional Theory* - This approach emphasises the importance of the relationship between leader and followers, focusing on the mutual benefits derived from a form of 'contract' through which the leader delivers such things as rewards or recognition in return for the commitment or loyalty of the followers.
- *Transformational Theory* - The central concept here is change and the role of leadership in envisioning and implementing the transformation of organisational performance

A modern approach to organizational management emphasizes the need not only for managers with

leadership potential. Increasingly, focus is on educating leaders at all levels of the organization, with a strong emphasis on the effective use of human resources - the source of the main competitive advantage of organizations (Šilingienė, V., 2011). Fulop and Linstead (1999) point out that one of the most significant claims of the Human Relations Movement was that leadership was the single most important factor in motivating employees and improving productivity (Connell, J.; Bernadette Cross, B.; Parry, K. 2014).

The working environment of leaders has changed a lot during the last twenty years. Twenty years ago, to be a leader was a position and nowadays it is a task, a very difficult and challenging task. The global world of the twenty-first century is requiring new leaders with a unique combination of competencies. According to Sydanmaanlakka, P. (2003) the eight forces that will dominate the business world of the twenty-first century are:

Fig 3. Forces dominating business



Source: Sydanmaanlakka, P. (2003)

According to author continuous change also demands a lot from the individuals. Work has become a continuous learning process.

Leadership competencies

Together with research on the concept of leadership competencies, research in this area is developed by analysing the importance of leadership competencies for an organization. In this field of research, leading scientists such as Golemann, Boyatzis, McKee and others have introduced their work. Others (Geoghegan, L; Dulewicz, V., 2008) scientist analysed relationship between leadership dimensions with certain project success.

David McClelland conceived the original use of competencies. He first used competencies as an alternative for the replacement of intelligence tests with criterion reference testing (McClelland, 1973). He argued that intelligence tests were not valid predictors of intelligence, and thus irrelevant to the workforce. McClelland (1973) writes that competencies are normally based on an analysis by interviewing and observing an expert performer. During the analysis, key behavioural indicators are determined for successful performance of the job. These behavioural indicators are then linked to a competency (R. E. Boyatzis, 1982).

McClelland, in 1973, linked the concept of competence with personnel management. But the most significant foundation for excellence research is

by the US researcher R. E. Boyatzis (1982), which states that competence is the characteristics of an individual whose causative relationships relate to effective or better performance. It is defined by various terms: characteristics, features, qualities, knowledge, skills and motives, which are causally related to the superior performance of management work (Martinkienė J., 2011).

According to Adsule, K. G. and Berad R. R. (2014) the literature relating to competence and competencies is extremely wide ranging in terms of management practices. Understanding the definition is of prime importance as it forms the base for development of competency models.

The concept of competence is usually applied to define the whole of individual abilities and knowledge, oriented to effective performance in particular working environment. It is emphasized that individual working results as well as the whole business success depend on it (Savanevičienė A., Stukaitė D., Šilingienė V., 2008). Outstanding leaders, managers, advanced professionals and people in key jobs, from sales to bank tellers, appear to require three clusters of behavioural habits as threshold abilities

and three clusters of competencies as distinguishing outstanding performance (Boyatzis, R. E., 2008).

Logical structures of competences appear in the scientific literature including "hard", professional competence, which is determined by the area of organization performance, on the other hand, "soft" competence, which is defined by personal features of an employee, his or her behaviour, necessary for good job performance (Savanevičienė A., Stukaitė D., Šilingienė V., 2008). According to (Boyatzis, R. E., 2008) it can be:

- Professional competence - systems thinking and pattern recognition
- Social competence - self - awareness and self-management competencies, such as emotional self-awareness and emotional self-control.
- Conceptual competence - social awareness and relationship management competencies, such as empathy and teamwork.

Savanevičienė, Šilingienė and Stukaitė (2009) have formed strategically important competence groups that are strategically important in the business world. These competencies allow the organization to gain an edge over the human factor.

Table 3. Strategic competence groups

Group	Definition
Leadership	Inspirational motivation Initiative Self-submission
Having a vision	Strategic Management Openness to change Innovative Decision making
Orientation	Achievement of the goal Process competence Learning, development Knowledge Management
Collaboration	Teamwork Communication Conflict management

Source: Savanevičienė, Šilingienė and Stukaitė (2009)

Competency models can be very widely applied in organizations. Competency structures can be used for recruiting, selecting, evaluating managers, providing feedback (Petkevičiūtė N.; Kaminskytė, 2003):

- Competence in recruiting and selecting employees is assumed, that past behaviour can help predict future behaviours in similar situations
- Competencies are used to assess the performance of work to determine the need for managerial staff development according to lists of competencies;
- Compensation system is often used to assess rewards structure and may be related to certain salaries components - basic and variable remuneration.

The appraiser must have a wealth of features in his everyday work to control, train and otherwise influence his employees. From the appraiser's leadership features, a productive and responsible valuation work in the company depends. It is important to mention

that one of the important aspects is the legal responsibility of the appraiser, and therefore the trust of employees and the honest work of employees is very important. The groups of leadership competences are shown in the table below.

Table 4. Groups of leadership competences

Group	Competencies
Traditional functions	understanding of problems decision making leadership delegation of decisions short term planning strategic planning coordination goal setting control motivation for power motivation for persuasion team squad performance
Task orientation	initiative focus on the task urgency decisiveness
Orientation towards the person	compassion co-operation social justice courtesy political agility categorical seeking a deposit focus on the user
Organizational Identity	discipline orientation to the rules personal responsibility reliability compliance with work limit professionalism loyalty
Attitude	tolerance adaptation creative thinking cultural understanding
Emotional control	strength stress management
Communication	listening skills verbal communication public presentations written communication
Self and others education	raising goals performance evaluation feedback work enrichment self-education
Professional intelligence and interest	technical experience organizational awareness quantity, quality financial

Hassanzadeh M. (2015) competencies defined as a set of behavioural patterns that can help you to effectively carry out an activity in an organization. It is also defined as employee behaviour groups that create better performance. Another definition defines competence as a person's characteristics that distinguishes exceptional results. Authors described competences as "how" leadership. So, leaders have enough competencies to do their job well. They refer to competencies as "specific skills and abilities that influence" the effectiveness of their leadership.

Bennis (1999) identified five aspects of leader competence (Connell, J.; Bernadette Cross, B.; Parry, K. 2014):

- technical competence;
- interpersonal skills;
- judgement;
- conceptual skills and character.

Bennis believes that character is the vital element that determines leader efficacy as he claims that he has never found a person to be rejected due to technical incompetence but has seen people rejected because of a lack of character.

Conclusion

The working environment of leaders has changed a lot during the last twenty years. Twenty years ago, to

be a leader was a position and nowadays it is a task, a very difficult and challenging task. The global world of the twenty-first century is requiring new leaders with a unique combination of competencies. A modern approach to organizational management emphasizes the need not only for managers with leadership potential. Increasingly, focus is on educating leaders at all levels of the organization, with a strong emphasis on the effective use of human resources - the source of the main competitive advantage of organizations. Authors point out that one of the most significant claims of the Human Relations Movement was that leadership was the single most important factor in motivating employees and improving productivity.

The most significant foundation for excellence research is by the US researcher R. E. Boyatzis (1982), which states that competence is the characteristics of an individual whose causative relationships relate to effective or better performance. It is defined by various terms: characteristics, features, qualities, knowledge, skills and motives, which are causally related to the superior performance of management work. Authors in literature review states that concept of competence is usually applied to define the whole of individual abilities and knowledge, oriented to effective performance in particular working environment. It is emphasized that individual working results as well as the whole business success depend on it.

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THE PROTECTION OF PERSONAL DATA IN CONTEXT NEW SLOVAK LEGAL ACT

Daniela NOVÁČKOVÁ

Abstract

The data protection ranks among the fundamental rights and freedoms guaranteed by the Constitution of the Slovak Republic. The processing of personal data of individuals forms part of the labor relations. It is necessary in all processing operations that employers ensure the protection of personal data of their employees on the required level and that they would not provide information on personal data without the consent of involved person. This thesis analyses the Slovak legal regulation of personal data protection with regard to the obligations of the employers to protect the personal data of their employees. The employers are obliged within the framework of fulfilment of legal obligations in relation to various state authorities (social security authority tax authorities) and other entities to process personal data of the employees. The result of the analysis is that the protection of personal data of individuals in Slovakia is ensured at a high level and complies with the European standards.

Key words

Data protection, fundamental right, right to be forgotten, independent authority

JEL Classification: F66, M15, L86

Introduction

Personal data protection represents the new area of law that has come to the attention starting from 1970s in connection with technical and technological development. At the initiative of international organizations, States begun to adopt systemic measures to protect personal data. The Member States of the Council of Europe adopted Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data. This Convention is the first binding international instrument which protects the individual against abuses which may accompany the collection and processing of personal data. The aim of this Convention is to regulate the cross border flow of personal data (Council of Europe (1981). The Slovak Republic acceded to this Convention and is bound by it. In Slovakia the Law No. 428/2002 Coll. on the Protection of Personal Data was adopted in the year 2002 and it has been subsequently several times amended. It was one of the duties stemming from the preparation for the membership of the country in the European Union. The Law No. 122/2013 Coll. on the Protection of Personal Data abolished the Law No. 428/2002. Further to the new secondary legislation of the European Union in Slovakia the new Law No. 18/2018 Coll. on Protection of Personal Data and on Changing and Amending of other acts was adopted in the year 2016. The Slovak legal regulation strengthens the rights of individuals and provides the effective and functional means that will ensure their right to be informed about their personal data and enable more effective exercise

of their rights. At the same time, it provides greater responsibility for the data processors to ensure the availability, integrity and reliability of information systems and to protect sensitive personal data from loss, damage, theft, modification and destruction.

Goal and Methodology

The aim of this scientific study is to point out the significance and importance of personal data protection having in mind in particular the fact that the right for personal data protection rank among the fundamental rights and freedoms. Having regard to the extent of the given problematics the composition and choice of individual parts of this scientific study have been made from general to concrete facts. The effort has been to clarify the notion of personal data, freedom of flow of personal data and to compose the catalogue of rights connected with the personal data protection. The basic theory on the protection of personal data has its origin in international conventions of international organizations and in legal provisions. In order to get the general overview, the specific example of the violation of the personal data protection is also provided. In this scientific study we use the general methods, in particular description of facts, analysis, synthesis, deduction and induction. Covering of the issue in this scientific study was preceded by the high quality heuristics of the relevant EU legislation as well as the Slovak legislation. Among the basic information sources used in the scientific study, rank in particularly the EU legal

regulation, explanatory report to the Law on the Protection of Personal Data, scientific reports, decisions of the courts and internet sources. With regard to the fact that the Law on the Protection of Personal Data contains more than 100 articles, only provisions relating directly to individuals were analyzed.

Findings

The Europe Strategy 2020 introduced the Digital Agenda for Europe as one of seven flagship initiatives. The creating the digital single market forms part of the digital agenda. It essentially entails removing national barriers to transactions that take place online. It builds on the concept of the common market, intended to eliminate trade barriers between Member States. The rise of the digital agenda also involves the protection of personal data and the introduction of secure measures related to the transfer of data to other states. Findings of this thesis are positive, because under the influence of European Union law, a new Law on the Protection of Personal Data covering the processing and protection of personal data has been adopted, thereby ensuring the adequate protection of fundamental rights to privacy. At the same time, we have pointed out the responsibility of the Slovak Republic for the fulfilment of its rights stemming from its membership in the European Union, which is stipulated in its Accession Treaty to the EU as well as in Article 7 paragraph 2 of the Slovak Constitution. It is the obligation to transpose the respective directive into the internal legislation within the given deadline. The directives are legally binding legal acts of the EU that have to be transposed by the Member States as to the goal they pursue.

Discussion

1.1 Legal framework protection of personal data of the EU

The protection of natural persons in relation to the processing of personal data represents the fundamental right and it also forms part of the right to privacy of individuals. From the point of view of the EU law the problematic of the protection of personal data is regulated in article 16 paragraph 1 of the Treaty on the functioning of the European Union (OJ EU C 83.30.3.2010). The provision of this article enables adopting the rules on the protection of individuals as regards the processing of personal data by institutions, bodies, offices and agencies of the EU

in performing their activities belonging to the remit of the EU law.

The Declaration no. 21. on the protection of personal data in the fields of judicial cooperation in criminal matters and police cooperation also forms part of the Treaty on the Functioning of the European Union. According to this declaration *the Conference acknowledges that specific rules on the protection of personal data and the free movement of such data in the fields of judicial cooperation in criminal matters and police cooperation based on Article 16 of the Treaty on the Functioning of the European Union may prove necessary because of the specific nature of these fields.*

In Charter of Fundamental Rights of the European Union the protection of personal data is enshrined in its article 8 as the autonomous right separated and different from the right to respect the private life in expressed in its article 7. (OJ EU C 83.30.3.2010) *Article 8(2) and (3) Charter of Fundamental Rights of the European Union specifies that such data must be processed fairly for specified purposes and on the basis of the consent of the person concerned or some other legitimate basis laid down by law, that everyone has the right of access to data which have been collected concerning him or her and the right to have the data rectified, and that compliance with these rules is to be subject to control by an independent authority* (para 69, in Case C-131/12)

In addition to the regulation in the primary law of the EU the secondary legal acts adopted by the EU institutions are of significant importance, mainly: Directive (EU) 2016/680 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data by competent authorities for the purposes of the prevention, investigation, detection or prosecution of criminal offences or the execution of criminal penalties, and on the free movement of such data, and repealing Council Framework Decision 2008/977/JHA (OJ L 119, 4.5.2016) and Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (General Data Protection Regulation) (OJ EU L 119, 4.5.2016.).The Directive (EU) 2016/680 in its Article 1 paragraph 2 imposes to the Member States the obligation to protect the fundamental rights and freedoms of natural persons and in particular their right to the protection of personal data. Regulation 2016/679 provides individuals with rights that are enforceable by legal remedies, it specifies data processing obligations for operators in the EU institutions, bodies, offices and agencies.

1.2 Slovak legislation on the protection of personal data

Further to the obligation of the Slovak Republic to transpose directives into its domestic legal system, the *Directive 2016/680* has been transposed into the Slovak legal system, more specifically into the Law on Personal Data Protection of 2018. This Law is implemented in accordance with the *Regulation 2016/679*. This legal regulation applies to the personal data processing by the competent authorities in fulfillment their rights in criminal proceedings. The law does not apply to the processing of personal data by natural persons for their own use in the context of their domestic activities (e.g. personal diary, personal correspondence, or diary management, or creating a photo album).

In the Slovak legal order the protection of personal data that ranks among fundamental rights and freedoms guaranteed by the Constitution of the Slovak Republic. According to article 19 paragraphs 2 and 3 of the Constitution of the Slovak Republic *everyone has the right to protection against unauthorized interference in private and family life as well as against unauthorized collection, publication, or other misuse of personal data*. According to article 16 of the Constitution of the Slovak Republic the inviolability of the person and its privacy is guaranteed while the inviolability of privacy in connection with the whole personal sphere of private life is meant, and not only limited to the dwellings and what is happening behind the doors of people's houses or apartments.

The conditions of personal data processing in the labor law relations are regulated by the Labor Code as well as the Law on Personal Data Protection.

For the purpose of labour relations, including the application of related rights and obligations (e.g. social insurance, health insurance, calculation of travel allowances, calculation of wages, employer's liability for the health of an employee in the form of an accident at work or occupational disease, etc.) the processing the personal data is regulated either in Labour Code (Law No. 311/2001 Coll.), or in other special laws (for example in the Law on Safety and Protection of Health at Work, Law on Public Health Protection).

In article 2 of the Law on Personal Data Protection the notion of personal data is clearly defined. From factual point of view the term "personal data" refers to data that relate to an identified or identifiable natural person, i.e. determined or determinable, directly or indirectly. From the point of view of the protection of personal data the „determinability of natural person“ is understood such situation, when it is possible to

identify the person on the basis of one or several available data.

Personal data can be in the concrete situation for example: title, name and surname, address of domicile, date of birth, birth number, data on health, concrete tattoo, localization data, online identifier, etc. (article 2 of the Law). The notion of personal data includes data providing any kind of information related to individual in processing his or her personal data in the information system, without limitations as to the content of the personal data that are processed. At the same time it extends the range in addition to the mentioned personal information (e.g. name and surname) to the new type of data, such as IP address or cookies files.

The Law on the Personal Data Protection differentiates in broader context also the notions genetic data and biometric data. Genetic data should be defined as personal data relating to the inherited or acquired genetic characteristics of a natural person which result from the analysis of a biological sample from the natural person in question, in particular chromosomal, deoxyribonucleic acid (DNA) or ribonucleic acid (RNA) analysis, or from the analysis of another element enabling equivalent information to be obtained (paragraph 34 of the Regulation 2016/679). Personal data concerning health should include all data pertaining to the health status of a data subject which reveal information relating to the past, current or future physical or mental health status of the data subject (paragraph 35 Regulation 2016/679). On the basis of above mentioned these identifiers can be divided into three groups:

- a) those we have been assigned to for general identification – name and surname;
- b) those we have inherently – fingerprints, face, DNA;
- c) those assigned to us for a particular purpose – PIN of a payment card, address of domicile. (Mastalka, 2008, p.16)

Within the framework of European integration, we quite often encounter the institute of free movement related to the internal market of the EU. The Slovak legal regulation in article 4 provides for the free flow of personal data between the Slovak Republic and the Member States of the EU. The free flow of personal data is also connected with the Digital Single Market that is one in which the free movement of goods, persons, services and capital is ensured and where individuals and businesses can seamlessly access and exercise online activities under conditions of fair competition, and a high level of consumer and personal data protection, irrespective of their nationality or place of residence (A Digital Single Market Strategy for Europe, 2015). The Slovak Republic has undertaken not to restrict or prohibit the transfer of personal data in order to protect the

fundamental rights of natural persons, in particular their right to privacy in connection with the processing of their personal data. Removing obstacles to cross-border data flows is essential for a competitive European data economy. (Gabrielová, 2017)

The Law on the Personal Data Protection regulates in its articles 6 to 13 the principles for processing personal data that have the aim to respect the fundamental rights and freedoms of involved persons and to prevent infringement of right to privacy and protection of human dignity or to prevent other unlawful interference with the right to privacy. The processing of the personal data has to be legitimate and legal (principle of legality, principle of limiting purpose, principle of mineralization of personal data, principle of correctness, principle of minimum personal data retention, principle of integrity and confidentiality). The purpose of the processing must be legitimate, and the chosen method or specific technology with which the processing is to be undertaken must be necessary for the legitimate interest of the employer. The processing must also be proportionate to the business needs, i.e. the purpose, it is meant to address (Article 29 data protection working party, 2017). The principles of fair and transparent processing of data require that the person concerned is informed of the existence of processing operation and of its purposes. The operator should provide the concerned person with further information needed to ensure fair and transparent processing while all concrete requirements and the context of processing of those data. If personal data are obtained from the concerned person, this person should also be informed whether or not to provide personal data and the consequences if he does not provide the data.

The employer or other entitled subject is according to article 13 paragraph 1 of the Law on the Protection of Personal Data entitled to process the personal data on the basis of the content of the person concerned. The consent is the expression of free will of person and should be formulated in an understandable and easily accessible form, clearly and simply. This means, that obtaining consent is not possible under coercion or under threat (refusal of future labour legal relationship). If there are several different purposes for which the personal data are being processed, the consent should be given for all these purposes separately and independently. The explanatory report to the draft Law on the Protection of Personal Data states, that *the form of written declaration including the declaration through the electronic means or oral declaration, is acceptable where other requirements of the consent are met.* (explanatory report of the draft of Law 2018) The personal data may also be processed without the consent of the person concerned

only on the basis of specific legal regulation, which provides for such processing or on the basis of an international treaty binding on the Slovak Republic. In this context we can talk about specific cases of personal data processing under the specific legal regulations. It is important to state that employees are seldom in a position to freely give, refuse or revoke consent, given the dependency that results from the employer/employee relationship. (Article 29, data protection working party, 2017) The Law on the Protection of Personal Data regulates also the possibility in its article 14 paragraph 3, that the person concerned has the right at any time to withdraw his or her consent to the processing of personal data. The concerned person has to be informed about the possibility of withdrawal prior to the providing the data. The act of revoking the consent requires proper administrative procedures.

The personal data can be obtained and processed only for the purpose defined or stipulated by the Law. The article 16 paragraph 2 littera b) of the Law on the Protection of Personal data stipulates that, *processing is necessary for the purpose of fulfilment and performance of special rights of the operator or concerned person in the field of labour law, law of social security, social protection or public health insurance according to the special law, international treaty binding on Slovakia or according to the collective agreement, provided they contain adequate guarantees of the protection of fundamental rights and interests* (preventive occupational medicine, providing health care, social insurance, etc.) The scope and content of the processed personal data has to correspond with the purpose of the processing and has to comply with the condition of necessity of achieving the purpose. The Law on the Protection of Personal Data improves the legal status of concerned persons, i.e. natural persons, by guaranteeing new rights to them in connection with the processing of personal data in the context of new technologies and ways of their processing. The Law on the Protection of Personal Data explicitly stipulates

- a) the right of access to personal data in article 21. This provision enables the person to obtain from the operator the confirmation about the way of the processing of personal data, i.e. the purpose, scope and period of personal data retention, etc. Information about the specific person can be subject to lecture – and transfer to other state or international organization. In such a case, the concerned person has the right to be informed about the protection of his/her personal data.
- b) the right for rectification of personal data in article 22. According to this provision the operator is obliged to rectify the incorrectly retained data about the person concerned. As a result of incorrectly processed personal data, a

particular injury can be caused to the person concerned. For this reason, it is important that the operator to always process correct and up-to-date personal data. (See case C-131/12)

- c) the right to erasure of personal data in article 23 ('right to be forgotten'). The person has the right to delete the personal data relating to him or her without undue delay. It explicitly provides for the right of the person concerned to withdraw his or her consent to the processing of personal data without giving any reason, as well as the right to object to automatic processing and profiling, or if personal data are processed unlawfully. The reason for erasure is the fulfilment of the obligation under the Law on the Protection of Personal Data, a special regulation or an international treaty binding on the Slovak Republic. In case of the personal data were disclosed, the operator will have to inform third parties processing the data and inform them that the person concerned requests them to be removed, including the removal of links or other references. The aim of this provision is to increase the control of persons involved over the processing of their personal data.
- d) the right to restriction of processing of personal data in article 24. The processing of personal data is possible only if the processing of such data is legal and necessary to achieve the purpose, or if there is a legal claim, respectively.
- e) the right to be notified on rectification or erasure of personal data or restriction of processing of personal data in article 25. It is the responsibility of the operator to notify the recipient of the rectification of his or her personal data, the deletion of personal data or the limitation of the processing of personal data.
- f) the right to data portability in article 26. In order to strengthen the control over its own personal data, the concerned person in the case where the processing of personal data is carried out by the controller by automated means of processing, has the possibility to obtain the personal data s/he has provided to the operator in a structured and interoperable format and to transfer it to another operator, without the first operator to whom it has been given would prevent or restrict it in any way whatsoever. The right to data portability does not apply to the processing of personal data necessary for the performance of a task carried out in the public interest or in the exercise of official power entrusted to the operator. (article 26 paragraph 2)

This catalogue of rights related to the personal data protection strengthens the fundamental rights of persons. We find it right, that these rights are also set in the Regulation (EU) 2016/679, in particularly in its

articles 15 -20, which is directly applicable. According to article 288 of the Treaty on the Functioning of the European Union a regulation shall have general application. It shall be binding in its entirety and directly *applicable* in all Member States. (OJ EU C 326, 26.10.2012). The regulation ensures the uniform application of the Union law in all Member States. At the same time, it prevents the application of national provisions that are incompatible with its provisions.

The Law on the Protection of Personal Data in its article 30 provides for the limitation of rights of the person concerned. According to this provision it is possible to limit the rights of persons due to the protection and safety of the Slovak Republic, due to the protection of public order, the fulfillment of tasks for the purposes of criminal proceedings, etc. There is the legal possibility when the rights of individuals can be restricted, however, such a restriction respects the fundamental rights and represents a necessary and appropriate measure in a democratic society. The limitation of the rights of the concerned person based on the protection of natural security or the protection of public order relates to the information duty of the operator, the rights of concerned person, such as the right to rectification, the right to erasure, right to the limitation of processing, the right to transferability of data, the right to object, the right to object the automated individual decision, including profilation, etc. (Explanatory Report to the draft Law)

1.3 Case study -Right to erasure and blocking of data — 'Right to be forgotten'

The internet has revolutionized our lives by removing technical and institutional barriers to dissemination and reception of information, and has created a platform for various information society services. (Jääskinen,2013). In this context we have to take into account that the internet magnifies and facilitates in an unprecedented manner the dissemination of information. (See case C-509/10) The legal order of the European Union does not regulate explicitly the rights, obligations and a legal position of internet search engine service providers. In this context the notion „processing of personal data“ can be clarified using the quote from the judgement of the Court of Justice of the EU in case *Lindqvist* that 'the operation of loading personal data on an internet page must be considered to be processing of personal data (C-101/01, coll., p. I-12971, para 25 -29). The publishing of correct information in internet in the Google search has also been the subject of the preliminary ruling proceedings before the Court of Justice of the EU in case *Mario Costeja González v. Google* (C-131/12). The Court of Justice has dealt with several questions

within the framework of the proceedings held in respect of the question posed by the Audiencia Nacional: *protection of individuals with regard to the processing of such data*, territorial scope of application, Charter of Fundamental Rights of the European Union — Articles 7, 8, 11 and 16. The basic issue with respect of the aim of this scientific study is the question of publishing the accurate and relevant information about persons. The information on the auction of real estate was published in the newspaper in 1998 related to Mr. C. González, who was the debtor in the system of social security. This information was later on published also on the internet portal. After longer time Mr. González accidentally wrote his name to Google. To his big surprise, Google's search results revealed information about his house auction for not paying to the social security system. In 2009 he asked the newspaper publisher to remove this information. At the same time, he objected that this situation has been solved, since he paid all his debts from the social security and his house was not confiscated. This fact, however, was not published in the report of company Google on its web site. The case became before the national court, which has posed the Court of Justice the preliminary questions under Article 267 TFEU. The result of the proceedings was the judgement of the Court rendered on 13 May 2014 from which it follows that : *As the data subject may, in the light of his fundamental rights under Articles 7 and 8 of the Charter, request that the information in question no longer be made available to the general public on account of its inclusion in such a list of results, those rights override, as a rule, not only the economic interest of the operator of the search engine but also the interest of the general public in having access to that information upon a search relating to the data subject's name. However, that would not be the case if it appeared, for particular reasons, such as the role played by the data subject in public life, that the interference with his fundamental rights is justified by the preponderant interest of the general public in having, on account of its inclusion in the list of results, access to the information in question* (Case C- 131/12). The Court of Justice in this case confirmed the existence of right to be forgotten and the right to erasure of unreal, untrue and detrimental personal data of individuals.

Conclusion

The Slovak legal regulation provides for the modern legal framework of the protection of personal data with the aim to ensure the respect for fundamental rights and freedoms in the context of evolving information and communication technologies and at the same time enabling the free flow of personal data.

In the global world, the new technologies make easier the movement of persons, goods, capital, ideas and personal data and there is a need of regulation at the national, European and international level. The purpose of the new Law on the Protection of Personal Data was, *inter alia* to achieve the complete compliance of the national legal framework of personal data protection with the relevant EU legislation. With regard to the fact, that the new legislation extended and clarified the individual rights of the concerned persons (right of rectification, right of cancellation, right to data transfer, right to object, it is the duty of employers and other institutions to respect that fact. In principle it is necessary, that everyone who processes personal data, is responsible for their processing and at the same him is obliged to inform regularly their correctness and relevance of processed data, and to ensure that they are updated. The new legal regulation will also have the economic impacts for employers and entities that are processing personal data, because they will have to invest substantial means to align the information systems with the new legislation. On the basis of the court case it was pointed out that the processed personal data should be correct and updated as the case may be; the adequate and effective measures have to be taken that the personal data, that are incorrect from the point of view of the purpose for which they are processed, would be erased or corrected without any delay.

Acknowledgments

The development of interned and social networks accompanied by the new business models and connected steep increase in the use of IT technologies have required the substantive change in the regulation of the protection of personal data. Due to the development of digital economy the measures have been adopted at the EU level with the aim to strengthen and built trust of people in the digital economy and electronic services that cannot function without effectively without the personal data. In broader context it has to be taken into account that the fundamental right for the protection of privacy and personal data became the factual means of payment for the services of modern digital economy. The Slovak Republic as the EU Member State had to adopt respective measures that are in accordance with the European requirements. On the basis of concrete facts, we have pointed out that the Slovak legal regulation provides the adequate protection for the rights of individuals against unauthorised interference with their private life. The provisions of the Law on the Protection of Personal Data that regulate the concrete protection of individuals have been identified. We have pointed out the fact that it is necessary to apply

the principle of legality and legitimacy in the interest of proper protection of personal data. In another words, any processing of personal data must be

lawful, fair and transparent in relation to the individuals concerned, and only processed for specific purposes laid down by law.

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PROBLEMS OF FLEXIBILITY OF WORKING HOURS IN GERMANY AND AUSTRIA

Jarmila WEFERSOVÁ

Abstract

Globalized markets, demographic change and the increasing digitization of the economy become challenges for all companies. Employers are under pressure from caring for job security on the one hand and pressure from shareholders on the other. A modern labor market policy becomes essential. Modern working time policy means flexibility of working hours and segmentation of jobs. This flexibility means a change in the usual situation and duration of working hours. The aim of these changes is to adapt working hours to fluctuations in capacity utilization. By making working hours more flexible, different models of working time are emerging: daily or weekly working hours, sliding working hours, annual working hours, sabbaticals, annual working time contract, working life models, sliding retirement, models of part-time work, job sharing and marginal employment. The opinions of employers and employees about flexibility of working hours, its benefits and consequences, differ in many ways. It is interesting to compare the arguments of both sides.

Key words

flexibility of working hours, segmentation of jobs, models of working time, job sharing

JEL Classification M 55, M 51, J 41

Introduction

The processes of labor market flexibilization are today very closely linked to the phenomenon of globalization. While globalization is certainly not a new phenomenon, the intensity and scope of cross-border interaction relationships since the mid-1980s and since the end of the East-West conflict have increased dramatically. These are economic transactions, informational and cultural exchange processes or international political agreements and contracts.

This article deals with the effects of this extension of social relations beyond the borders of the nation state to the labor market flexibilization and the change of individual CVs. (Szidlik, 2008) The effects of the globalization process on labor market flexibilization are differently determined by men and women at each stage of the life and work history and are processed differently by everyone.

There are several implications for the transition from youth to adulthood in trying to establish oneself in the labor market, as well as the implications for starting a family, birth planning and birth rate. The employment history of men during their careers and the employment history of women, considering family development and maternity, are also characterized by labor market flexibility. In an analogous way a late career in employment and the transition to retirement are influenced by flexibility.

Flexibilization of the labor market means more flexibility in working hours, high segmentation of jobs in form of typical and untypical employment relationships and contracts.

Goal and Methodology

The aim of this scientific study is to present the current consequences of globalization for the employment market chances and problems of flexibility of working hours in Germany and Austria such as the gradual disuse of the eight-hour-day. In this study a variety of scientific methods has been applied. The main method is analysis and this has been used for the analysis of the contemporary consequences of globalization for the employment market as well as the analysis of flexibilization of working hours leading to various working hours models.

We analyse the reduction and flexibilization of standard working hours, ways to make the labor market more flexible - short-time working allowance, opening clauses of collective agreements, working time models and the effect of flexible working hours on individual CVs in Germany and Austria.

Findings

Globalization, the free movement of capital, goods, services and persons, the associated liberalization of labor relations, the flexibility of income and working time, the deregulation of the labor market still place high demands not only on employees but also on employers and on the legal regulation of labor relations.

Labour relations have been strongly individualised recently (Kajanová 2011). Labor market flexibility is provided by employers with job security. The collective agreement to introduce the four-day week at Volkswagen to secure 30,000 jobs in 1993 had an exemplary function. The collective bargaining parties subsequently agreed on the possibility of reducing weekly working hours without pay compensation in numerous industry collective agreements with simultaneous exclusion of company terminations. In the financial crisis of 2008/09, these regulations contributed significantly to the stabilization of employment.

Flexibilisation of working time in Europe in different constellations is a general trend. The importation of new management models of human resources in central Europe challenged the traditional relations of the people to their work in the private but also in the public sector. (Delaneuville, 2017) However, which, however, takes different forms depending on the national and institutional context. In the industrial society of the sixties to the eighties, after the implementation of the eight-hour day, there were relatively rigid working hours, which, as part of the "normal employment relationship" (Mückenberger 1989), also set the orientation framework for sectors and employment fields with deviating regulations. Since then, working time reduction has only taken place through the growth of part-time employment. Only recently, based on employment policy, health and environmental arguments (Flecker and Altreiter 2014, Risak 2015), there are new approaches. New in Austria are the first collectively agreed agreements, such as the leisure option in various collective agreements - which in turn leave room for individual choice (Schwendinger 2015).

In Europe in general, a heterogenization of the working time can be identified. Standardized working hours can only be found for men. (European Commission, 2010)

In the EU working time is regulated by the Directive on the organization of working time. (Working Time Directive (2003/88/EC) European Commission.) In Germany working time is regulated by the Act on the organization of working time ("Arbeitszeitgesetz" = ArbZG) of the Federal Ministry of Justice and Consumer Protection, in Austria by the Working Time Law (Arbeitszeitgesetz

= AZG). In Slovakia, the Labor Law (Zakonník práce) regulates working hours.

The Working Hours Act (ArbZG) in Germany (for example) regulates the permissible maximum duration of the daily working hours as well as the rest periods after the daily working hours. The ArbZG transposes the EU Working Time Directive into German law.

1. Reduction and flexibilization of collectively agreed working hours

Working time flexibilization is any, even temporary, change in the usual situation and duration of working hours. The aim of these changes is, on the one hand, the adaptation of working hours to fluctuations in capacity utilization, and on the other hand, to open options to meet the individual needs and expectations of employees. The desire for change in working hours is also based on employees. Some of the employees manage to adapt the duration, location and distribution of working hours to changing preferences, life situations and working conditions. The position of working time refers to the respective beginning and the corresponding end of the working time to be paid. It can be arranged per day, week, month or year. The position and duration of working hours ultimately results in the distribution of working hours.

Germany is one of the countries with the lowest tariff working hours. Collective weekly working hours have not changed for ten years. In this development, the focus is always on working time flexibility and not on a general extension of the regular weekly working hours. This becomes particularly clear from the development of the average collective agreed weekly working time: It is currently about 38 hours a week for full-time employees, same as ten years ago (source: IAB, 2017)

The reduction and flexibilization of collectively agreed weekly working hours took place in the 1980s. This was a matter of the introduction of the 35-hour week, but only in some sectors such as the metal-working, printing and timber industries. It took ten years to finally achieve the last step towards reduction in working hours. In many other sectors weekly working hours could at least be reduced by two to three hours. Macro-economically the number of weekly working hours went down to currently 37.5. This achievement can make many employees feel positive about their curriculum vitae. The reduction of weekly working hours had its price and brought problems for some of the employees: collectively agreed room for flexibilization was extremely extended. By means of so-called "working time corridors" weekly working hours could be irregularly distributed over an extended period. Flexi-time wage

records became more and more popular. Working hours varied according to the group of employed persons. Companies adapted collectively agreed standards. It was rather a company's demands that were definitive than the needs of its employees. In the 2000s further attempts to reduce working hours failed, in part working hours were even increased.

The world-wide recession in 1992/93 brought the topic of security of employment to the foreground. The collectively agreed introduction of a four-day week by Volkswagen to safeguard 30,000 jobs in 1993 took on an exemplary function: following this, unions and management in many sectors agreed the possibility of temporary reduction of weekly working hours with no wage adjustment and at the same time excluding lay-offs. This played a significant role in the stabilization of the employment situation during the fiscal crisis of 2008/09. The collectively agreed regulation of working time targeted certain employment relationships, for example part-time employment. In this way rules existed in certain branches, for example the retail industry, for daily or weekly minimum working hours to counteract a fragmentation of part-time employment. However, these efforts came to nothing due to collectively authorized exceptions.

Among the opportunities for flexibility in Germany count working time regulations in terms of qualification and training. In some cases, collective labor agreements on basic and advanced training also include regulations on working hours. Since 2012 employees in the metal-working industry in Baden-Württemberg have been entitled to take unpaid leave of absence for a period of up to five years for individual, job-related advanced training. In the current collective bargaining round the IG-Metall (German metal-working union) is negotiating a model for collectively agreed part-time employment with partial financing by the employer when an employee undertakes advanced training. One suggestion: an employee works normally for two years and receives 80 % of his net wage. Subsequently he is given two years off work at the same wage so that he will be able to do further training. An alternative could be to halve working hours for a period of four years and to use the other half for further training.

Since the 1980s unions and management have monitored and reacted to statutory regulations on early retirement and semi-retirement ("*Altersteilzeit*") by means of collective labor agreements. For some years the transition into retirement and other issues concerning the working lifetime have been the subject of demographic collective labor agreements in the steel, chemical and rubber industries and in companies such as the Deutsche Bahn AG (*German railways*). In the chemical industry for example the collective labor

agreement "*Lebensarbeitszeit und Demografie*" (*working life and demography*) provides for company demographic funds which are financed by employers. Amongst other things these can be used for long-term wage records, semi-retirement or organizing working hours to orientate to an employee's phases of life, for example to make job and family compatible with one another. In the collective bargaining round in 2015 the IG BCE (*Mining, Chemical and Energy Industries Union*) put forward for negotiation models with a three-day week for elder employees.

This scientific study intends to analyse the current chances and problems of the work environment in the age of globalization in Europe with examples mainly from Germany, sometimes from Austria. Germany currently has a very low unemployment rate. In February 2018 there were 2.546 million unemployed, the unemployment rate was 5.7% and 0.764 million registered vacant jobs (Federal Statistical Office, 2018). At the same time, we focus on identifying the consequences of labor market flexibilization for people and their families despite this low unemployment. In the larger context we deal with the consequences of globalization and value consensus that human rights recognize as being universal basic values.

2. Ways to make the labor market more flexible - Short-time working allowance, opening clauses of collective agreements, working time models

Models for the flexibilization of working hours reduce working hours but not jobs. One example is short-time allowance. This enables companies to temporarily reduce working hours. During this time their employees are paid for up to 67% of the lost working hours by the State. Short-time allowance has existed since the 1920s. The federal government extended the period for receiving this allowance from at most 6 to up to 24 months. At the same time flexi-time wage records were used more intensively. They made it possible for companies in a crisis to first let employees take time in lieu for hours which had already been accrued. In 2009 approximately 50% of all employees used flexi-time in this way, ten years earlier it was only 35%. So-called opening clauses also helped employers. They made it possible for employers and employees' representatives to agree deviations from collectively agreements under certain circumstances. In the 1990s this instrument was still uncommon, Volkswagen used it in 1993 for the introduction of the four-day-week. In 2005 65% of companies and 75% of the workforce in the manufacturing industry were already using it. Employers' considerations also differed from those in previous crises. According to the academics it was

chiefly export-oriented companies that were affected by the slump in international trade. Since employees in this branch were often highly qualified and training new ones would have been extremely difficult many companies did not lay off their employees – and preferred to find different solutions.

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Flexibility of working hours leads to various working hours models. These vary from the organization of daily or weekly working hours, flexi-time, yearly working time – sabbaticals, yearly labor contracts, working lifetime – flexible retirement to part-time working hours models – job-sharing. The hours to be worked can be defined either individually or for a group. Further forms are working on a standby basis, modular working hours, tandem working hours, working hours based on trust, flexible daily work, flexible shift systems, flexible duty rosters and manpower planning, flexi-time wage records, wage record credits (Wertguthaben) for employees, varying working hours oriented on capacities. Varying working hours oriented on capacities are determined under an agreement between employers and employees and the employee performs the amount of

work demanded by the workload. (Wirtschaftslexikon, 2017),

In tandem working hours two or more employees form a team which must be present during a certain, pre-determined work period. The employees can fulfil their tasks in a random order and time. In principle they substitute for one another whereby the scope is pre-determined. Tandem working hours are also suitable for leading executives. In practice, this model for flexibilization of working hours is mainly to be found in service industries. It is usually combined with flexi-time models. (Wirtschaftslexikon Gabler, 20017)

Job sharing is a specific form of part-time employment. The employment contract is agreed between the employer and two or more employees and establishes the duty of these employees to share one full-time job. This working hours model provides for a flexible management of each employee's working time within the total working time. (Wirtschaftslexikon Gabler, 20017)

The Legal basis is: § 13 Part-time and temporary employment law – Teilzeit- und Befristungsgesetz (TzBfG)

3. Effects of working time flexibility on individual curricula vitae

Working time flexibility also influences individual CVs. Young people dodge in alternative roles to insecure work, e.g. longer in the education system, rather than being defined as unemployed. In response, more flexible forms of partnerships are emerging, such as for example nonmarital partnerships. Even in the family-oriented countries of Central and Eastern Europe, such a strategy develops in dealing with this uncertainty. Men can no longer always fulfil their role as a family breadwinner. Unqualified women often cover the role of mother and housewife, while highly qualified women choose to work, not least because reconciling work and family life, for example in southern Europe, is poorly developed. This behaviour can also be observed in the declining birth rate in the countries of Eastern Europe. For family reasons, the earning potential, employment continuity and career opportunities of women are limited. Women disproportionately use flexible forms of work. The employers give as legitimacy several reasons, such as lower work experience and subsequent interruption of employment in times of motherhood. This necessary personal flexibility, i.e. work with parallel care obligations, does not correspond to the flexibility desired by entrepreneurs, which allows the employer to make short-term decisions.

Male employment history proves to be more stable in social democratic and family-oriented countries. Male employment history proves to be more stable in social democratic and family-oriented countries. On the other hand, there are signs of increasing insecurity among middle-career men in the US and Eastern Europe. For middle-aged men and women, individual resources in the form of educational capital are important to their careers. Furthermore, it is in the interest of companies as well as of the attractiveness of the business location oriented policy to find solutions to the discrepancy between increasing flexibility requirements and the limited flexibility potential of older workers. One way of resolving this discrepancy is to provide attractive financial incentives for early retirement of older workers. The attractiveness of such state early retirement is still increased by company severance payments, the so called golden handshake. Such policies also increase the value of the location for businesses.

The early retirement strategy is a costly option for economies and businesses. Another option is the requirement of lifelong learning through active employment policies of older workers, thus retaining older workers within the labor market. In the liberal United States and the UK low state pensions and high importance of private protection limit the possibility of premature exit.

Globalization has significantly increased the macro-structural uncertainty in modern societies. The uncertainty does not affect all individuals in the same way, but is very strongly channeled to specific groups - job entrants, the unemployed and women after a family career break. The existence of gender pay gap is later influencing the gender pension gap in EU (Mitková, 2016).

The consequence of this is an increase in social inequality.

Discussion

Globalized markets, demographic change and the increasing digitization of the economy and the world of work are among others challenges for companies that need modern working time policies and employees who are faced with more flexible working hours. From a scientific perspective, aspects related to the logic of companies should feed into policy making.

The problem seems to be that actors at the company level have incomplete knowledge of the possibilities and restrictions that the working hours law and collective agreements provide. Actors at the company level act relatively flexibly in practice, combining different working time models. This often

happens by agreement between employees, represented by the works council, and employers. The fact that workers at company level make certain concessions on working time models leads to a long-term downward spiral in the quality of employment conditions. This awareness is not always present among employees at the company level.

The flexible working time makes it possible to manage a fluctuating workload with less staff. Conversely, companies have a high demand for flexible personnel deployment when they are not employing enough staff when capacity utilization fluctuates. In view of a certain level of unemployment, the number of employees in the companies could be raised again. The topic of health and health-promoting work design is given too little consideration. Ensuring timely time compensation could help in some situations. The same applies to the reconciliation of family and work, also and especially in men's occupational sectors.

More demanding regulation of working time also requires developing better and smarter planning and management practices and tools rather than one-sidedly demanding flexibility from employees. The employer side is in principle interested in saving surcharges. In fact, the collective agreements of the union IG Metall and electrical industry continue to secure surcharges for overtime, even within the provided range of flexi-time. The union IG Metall wants a plus in salary and wants to enforce more flexible working hours, in principle the 28-hour week.

A good example of flexible working hours has already for a longer time been offered by the Berlin-based software company Tandemploy. Job-sharing and four-day workweeks are not foreign words, because first the employees can choose how long they want to work, and besides they sell the appropriate software for it. (TANDEMPLOY Unternehmen, 2018).

Working time flexibility makes it possible, on the one hand, to combine different working time models, but on the other hand, it is not always possible to return to the original working hours. The Social Democratic Party of Germany (SPD) even speaks of breaking the coalition agreement with the Christian Social Union (CSU) in Bavaria because of the right of return to the original working hours. The SPD envisaged this for companies from 15 employees, the CDU wanted to set the threshold at 200 employees. If the law would be applied only when the number of employees exceeds 200, "more than three million part-time employees would be excluded from the scope of the law". (Rückkehrrecht Nahles, 2017)

Another example of the implementation of flexible working hours on the part of the employees is the company VW. Employees can freely schedule their

working hours and decide whether and to what extent they will work from home in the future. Prerequisite is always the consent of the supervisor. However, this agreement only applies to employees who do not work shifts in production. This means that the company agreement only satisfies a part of the employees. However, this still confronts other employees with

major problems, for example when it comes to child care. (Standort38.de, 2016)

The trade union representatives from the German Trade Union Confederation (DGB) emphasized that the issue of working time design plays an increasingly significant role in their work (WKO.AT, 2016)

Table 1. Advantages and disadvantages of making working hours more flexible

Possible Advantages	for Companies	for Employees	for National Economy	Social Conse- quences
Better adaptation to the order situation	X		X	
Prevention of short-term staffing and dismantling (established practice in the USA)		X		X
More free days and long weekends possible for employees		X		
Increased employee satisfaction, leads to higher motivation and loyalty, increased innovation and productivity	X	X	X	X
A more flexible working time allows an improved quality of life, easier scheduling, consideration of health and a better reconciliation of work, family and leisure time.		X		X
Long-term calculation periods of one or more calendar years	X	X	X	
Statutory provisions on early retirement and partial retirement under collective agreements		X		
Collective agreements for qualification and further education with working time regulations		X		
Collective agreement "working life and demography" with demography funds financed by employers	X	X		
Reduction of working hours during certain phases of life		X		
Probable Disadvantages	for Companies	for Employees	for National Economy	Social Conse- quences
Less overtime and thus no overtime surcharge		X		
Growth of grey areas due to dissatisfied, unmotivated workers	X	X	X	X
Strengthening of the company level, weakening of collective agreements		X		X
The law empowers the company level to flexible design and much freedom in the organisation of everyday work.		X		
The limit for daily normal working hours should basically be raised to 10 hours while maintaining the 40-hour week - possibly other distribution during the week		X		
flexible time models such as long-term calculation periods of one or more calendar years		X		
Lower contributions to social security and pension insurance		X		X
No collective agreements for jobs not in need of further qualifications or training		X		X
Income risk; expiration of overtime if it is not consumed in a certain time,		X		
Difficult return to normal work contracts		X		

Source: own processing

In Austria, according to a recent survey, 73% of employees believe that today's world of work requires more flexibility than before. Only for 12% of respondent flexibility is not an issue. This raises the question of whether a cost-cutting competition is at all expedient.

While restrictive regulations, since they apply to all, cannot harm companies in competition within a country, the question of international competition is more difficult to answer. It raises the question of whether a cost-cutting competition is at all expedient. It would also be important to adapt the scope of the rules to the scope of the competitors and to harmonize provisions at European level.

Conclusion

Measures to make working hours more flexible create added value that should benefit both employers and employees alike. By making working hours more flexible, different models of working time are emerging. Working time models range from the design of flexible daily or weekly working hours, flextime, annual working hours, sabbaticals, annual work contracts, working life and sleeping retirement to part-time work, job sharing and mini jobs.

Western Europe has been witnessing an increase in the number of people who have different forms of

atypical employment since the 1980s. The atypical employment forms are, apart from the normal work contracts, part-time employment with 20 or less hours weekly, mini jobs, fixed term jobs and temporary work. In contrast to the normal employment relationship, atypical employment schemes cannot finance one's own and the family's livelihood. These atypical forms of employment also present uncertainties for young people entering the labor market. These uncertainties manifest in form of precarious, atypical forms of employment, e.g. fixed term work, part-time work, precarious forms of self-employment and lower income in the cohort comparison. Young people do not have the bargaining power to demand stable and continuous employment.

On the one hand, improved conditions for operational flexibility would be desirable because of the higher level of competitiveness, but on the other hand, rising birth rates are also desirable. There is no alternative to making work more flexible - both from the point of view of companies and from the point of view of employees. Modern regulations on the pulse of time should create clarity and security for all involved - employers and employees alike. The processes of globalization and flexibilization also bring about changes in the family planning and career paths.

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BASIC THEORIES OF MOTIVATION IN SLOVAC POLICE FORCE AND THEIR APPLICATION IN PRACTICE

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Abstract

The seminar work deals with the motivation of the civilian population to enter the components of the Police Force of the Slovak Republic. Another component is the motivation of the members of the church to pursue their profession and all motivating means acting on their primary decision-making. As police officers "on the street" are faced with the greatest strides, in terms of first contact with the citizen, it is important to direct and motivate them to right direction towards the achievement of common goals. An analysis of the current existing motivation system will bring the model of improvement to a more efficient use of available proven methods to encourage higher professional engagement. The dynamically changing society changes the perception of newly-conceived as well as permanent members of the church. Standard forms of motivation lose their effectivity and lead to apathy and possible work stagnation. On the basis of analyzes of the current models of motivation and methods of management of members of the Police Force SR, optimization has been determined and further applied to an armed state component whose functioning requires a special approach.

Key words

budget, crisis, expenditure, management, Police corp SR

JEL Classification: O15, J88, J79

Introduction

The orientation of the thesis is on motivation of members of the Police Corps. General view from the reception process of the new employee to the motivation of the police officers. Initially, the civilian motivation to join the Police Force of the Slovak Republic begins. The strategic objective of the thesis is to analyze the motivation of the policemen in the police councils, since in the long run there is a clear lack of good management management. Street workers must be properly motivated to achieve a fire performance.

Goal and Methodology

The outcome of the work will be a sketch of a possible solution - the basis for the police corps as an armed component and also for police officers. The thesis will work on the hypothesis: At present there are inappropriately used tools in the motivation process of the members of the staff, in which there is a decrease in the motivation of the members of the Police College of SR. When motivating church members, the primary objective will be to look at the various available forms of motivation for their positives and negatives. Basically, the work will focus

on possible improvements in individual motivational determinants.

Findings

The outcome of the work will be modeled on the proposal of an ideal police operative official who will set his / her leadership and motivation skills for the slaughterers. The work is based on the factual situation of governance that is present today, which still contains the socialism management motifs. The solutions offered are focused on the motivation of police officers working on the street, bounded by the Civil Service Act (Act 73/1998 on the Collection of Laws on Civil Servants of the Police Corps, the Slovak Information Service, the Prison and Judicial Guards of the Slovak Republic and the Railroad Police), its use and appropriate application.

Discussion

Primarily, work for operational management as a guideline for improvement and improvement in management approaches and the adequate use of incentive tools in mills. When emerging from practice, flexibility and decision-making in the areas of motivation by the senior officials will need to be

analyzed. The dynamically changing society changes the perception of newly-conceived as well as permanent members of the church. Standard forms of motivation lose their effectivity and lead to apathy and possible work stagnation. Practical examples of the use of motivation factors and sketches of model situations with the description of an ideal manager are discussed.

Motivation in Police Law

Managers are keen to ensure that employees meet their work, volume, quality, and cost goals. Workers' performance and the successful achievement of goals are the result of many factors, some of which are internal and are part of employee characteristics and others are external. Both sets of factors (internal and external) work together, so they can't make inaccurate or incomplete conclusions about their performance (Treľová et al., 2015, pp. 26). Performance can't be identified with motivation alone, so these concepts need to be distinguished. Work performance also depends on other factors such as worker and environment. The relationship between these factors can be expressed as follows:

$$V = f(M, S, P)$$

V - power

M - motivation

S - ability

P - environment

If individual factors are not sufficiently represented or if they are lacking, effective performance is not possible. (Sedlák, 2001, p. 378)

Theory of motivation process

Motivational theory of needs provides a useful basis for understanding motivations, but they do not capture the complexity of the motivation process, so they have limited validity. Process theories of motivation use a variety of procedures. The main theories are:

- The Equity, Equity, Equity, or Equity Theory,
- The theory of expectation,
- Enhancement theory (reinforcement theory).

According to Peráček (2011), Equity theory refers to the subjective judgment of the individual as to whether or not he has received a reasonable reward in comparison with other workers. In order to understand the theory of equity, it is necessary to understand in

the most complete way the following four meanings: the perceived result of the person concerned, the perceived outcome of others, the perceived entry of the person under consideration, the perceived entrance of others.

The theory of expectation is one of the most successful theories. It shows not only how people feel and behave, but also why they react and act. It is a more complex model of motivation than the theory of equity.

The basic model of motivation theory of expectation includes the following procedures:

Motivation leads to effort and effort combined with ability (determines the potential of an individual to do the job) and environmental factors, resulting in performance. Performance yields different results (rewards) when each value is combined, the value attributed to individual results is valency (individual value).

The empowerment theory is based on a simple statement that behavior is a function of past consequences, that is, influenced by them. The starting point of the motivation reinforcement theory is the stimulus, which means any situation in an environment that can be revealed by human senses and trigger a reaction.

An important determinant of individual performance is motivation. There are many definitions of motivation that differ in terms of expression or formulation, but which are usually similar to content or substance. For the different definitions of motivation, it is common that it is a psychological process, i. an iterative process that influences internal motives that motivate the behavior of a person, that is, activate or induce him to act with the intention of achieving the goal (Mucha et al., 2017, pp. 254-259).

A general model of motivation, which consists of three basic components:

1. At the beginning, the inner driving forces (motives, motives) resulting from the inner imbalance of the individual, which lead to the setting of goals and cause tension (physiological, psychological, sociological) to engage in the attainment of the goal,
2. the behavior of an individual who, by adjusting, seeks the means to achieve the goal and thus regulates the respective tension in himself in the belief that he will satisfy his inner motives, that is, the goal-oriented behavior,
3. Achievement of the goals - after reaching the individual, knowingly or unconsciously assessing whether the effort made has been, or is not, the extent to which the efforts made are beneficial to his or her performance-oriented behavior and, accordingly, will continue and deepen it, this feeling or what happens as

a result of behavior will affect other motives and the motivation process is repeated.

Motivation is directly related to the concept of the motif, which means the inner direction of a certain behavior and behavior of a person, determined by their direction (for a particular purpose), intensity and duration.

The motives are the most common instincts, instincts, desires, needs, interests, inclinations, duties, ideals, and so on. (Sedlák, 2001, p.299)

Personnel management is most often defined as an activity that focuses on employees - human resources and which, together with other functional areas of management, contributes to achieving a synergy - to meet the objectives of employees and the organization as a whole. Personnel Management is a strategic and thoughtful logical approach to managing staff that is individually and collectively involved in effectively meeting the organization's goals. (Kachaňáková, 2008, 235)

Performance can't be identified with motivation alone, so these concepts need to be distinguished. Work performance also depends on other factors such as worker and environment. In order for work to be effective, a person needs to do it (motivation), know how to do it, and have adequate equipment, materials, tools, and so on. to perform it (environment). If individual factors are not sufficiently represented or if they are lacking, effective performance is not possible. (Sedlák, 2001, p.378)

Employee benefits are a category of rewards that are not directly related to the performance of an employee, but entitle them to membership due to membership of the organization. The offer of employment benefits and services is very wide, but in principle we can divide them into three groups:

- benefits of a social nature such as different types of insurance, corporate loans, kindergarten, etc.
- benefits related to work, e.g. catering, education paid by the organization, sale of goods and services at discounted prices
- benefits associated with the status of an organization such as providing a service car, telephone and housing allowance, and so on (Kachaňáková, 2008, p. 235).

In personal and managerial practice, communication, communication skills, communication skills, etc. are now the most frequently used words. We find it hard to find a worker working in these areas who would not have completed at least one course or training to improve communication.

In spite of the effort and the demands to communicate as best and efficiently as possible, we are not witnessing the fact that there are still many misunderstandings, conflicts, inappropriate terms among the employees, colleagues, superiors and subordinates. The simple communication does not go the way we want, and, truthfully, we always feel that the other is making mistakes. (Búgelová, 2009, 119-122)

Motivational determinants of occasional competences in the radio of the police board SR

The Police Corps of the SR is a corps of police officers, police officers and also civilian personnel. A total of about 20,000 police officers and 6,660 civilian staff are involved. As a result, the first line that is, working in the streets is 4,303 martyrs. The total number of states of the Police Corps is determined by the government, which brings the police corps to the largest employer in the domestic market. It also creates the impression of a universal employer at first glance with low demands.

Definition of motivation

According to Vrabko et al. (2012, p. 200) any citizen of the SR who is 18 years old after the new one but for 21 years can apply to the police corps, minimum education - maturity, which are relatively simple requirements. This is a significant part of the population of Slovakia and it increases the incentive factor for entry into the police mainly in areas with lower education and lack of work.

In order for a civilian person to be recruited, he / she must fulfill other criteria. These are chronologically arranged physical tests, psychological tests and, finally, an interview. After this graduation, a civilian may enter into an employment relationship. From experience, the entire procedure can take from 1 to 2 to 3 months. What the interest of individuals can reduce by just a long wait, but after successful completion of all circuits, the usual sense of satisfaction comes from the wretched handling of challenging tasks.

After graduation, the potential candidate has to undergo half-year training. Basic police education, habits, skills and basic legal education related to cops work. By finishing the semester training, the final test results from the total knowledge gained during it. After successfully completing this training, he becomes a full-fledged police officer and receives a certificate of maturity. The above-mentioned habit of military character will greatly undermine and at the

same time selectively select candidates who do not take the psychological and physical onslaught and voluntarily leave.

The positive motivation can also be taken to the fact that during the service the policeman can make various trainings, he can get higher postgraduate education so- and may be transferred to another department, and must also meet certain criteria (Gregušová et. al. 2016, p. 611-618). In the Police Service, the most widespread and most basic layer is the law enforcement officers who are the most universal, as they are broadcast on every single message received by the respective operating centers (special units, patrol officers, cynologists, police police, command units, pyrotechnics, etc.) etc.), the places mentioned are suitable for graduates, but are places for persons with higher education (international relations, international police cooperation, functions of directors, representatives, economic departments, etc.). Every police officer in a certain position should have some relevant education and experience.

Motivation of the civilian population and police officers in practice

Motivation of components in the SR police in the civilian population can be divided into several variants or their combinations:

- the mission of a cop and his life's goal is to help others around,
- the need for certainty when the payment for the service is paid on a regular basis,
- the need for an extraordinary adrenaline occupation, in which there is no service the same, with the need for agile decision-making and action and dignity,
- Craft - family member, for example, father, old dad was in armed forces,
- Workplace at the place of residence - solution if a person wants to work in their place of residence or in the nearby area. (the distribution of police stations is symmetrical throughout the Slovak Republic)

Motivation of the benefits of armed forces that have been significantly reduced and reduced in the last year (up to 15 years nowadays 25 years for the possibility of taking a retirement pension, 10 month's severance pay, material gifts as rewards, financial rewards, special promotions, etc.)

In the case of police officers who have been deployed, for example, For 5 years, under certain conditions, the reward offered to them ranged from 15 to 25 years, which is in keeping with and respecting the terms of the contract and their non-compliance

with serious demotivation problems. The "benefits" before entering the church should not change after taking up and performing the profession. A more appropriate solution would be to increase the necessary years of retirement before signing the contract for newly recruited tenderers. There is greater discretion in choosing or accepting the change before the mandatory step of taking up the profession (Peráček, 2014, p. 17-28).

"The distribution of wages is clear, according to the claims -" tables "on the basis of which each member can calculate a wage that can be expected in advance. All members are subject to and are rated under the same nationwide table. The total wage attributable to the account is most affected by the number of years worked, which is the "payroll allowance".

The rank awarded by the policeman depends on the number of years worked, where the direct interest is paid, and the higher the number of years worked, the higher the rank, which, of course, depends on education. The higher the education, the higher the wage, but the member must be assigned to a higher education position, otherwise the higher educated members can work in "the streets" and with lower education they are functionaries, as they started in an earlier period, when requirements were not so high.

The cops, who work in performance, have a "risk" contribution in amount of \$ 66 for each calendar month, a risk premium that does not always correspond to the work done, as it may endanger the life of the service, and it also depends on whether the cop works in the capital or somewhere in a small department located in the villages. A possible solution would be an extra charge for work in more demanding places with more frequent occurrences of more serious criminal offenses.

The so-called "PERSONAL EVALUATION" is allocated by the supervisor according to predetermined funds, which are not usually sufficient for the "total available package". It follows that often financial incitement is inadequately redistributed on the basis of the superiors' sympathies and not according to their capabilities, education and performance that individual cops in the daily service serve, respectively. carried out.

The shift work is valued at € 100 (before taxes after tax of about € 70), which is granted nationwide. The problem arises when some police officers are more likely to work mostly during weekends and holidays, where others work during the week, and receive a reward of 100 euros as well. If the said remuneration was redistributed only on the basis of the service provided, it may often be the case that services in which the entitlement to remuneration is unevenly worked during the working month could be

redistributed according to sympathy at the expense of others who would the required number of holidays or weekends did not work and would not be eligible for full pay.

As a positive, it would be possible to identify a solution to the question of motivation, where from July 2017 there was a partial increase in salaries according to the tables of individual police officers. (Act no. 73/1998 Coll.)

Due to the increased lack of finance in recent years, monetary rewards are very rare. Rewarded cops will receive rather a praise or promotion, which in part fulfills a significant motivation factor. Although in general it is confronted with the view that a one-time financial reward would be better. However, based on long-term observation in this case, there is an effect where the one-time reward will be pleased, but the cop will soon forget about it, while the promotion symbol, and thus rank, is visible and gives some pride to every service performed (Pilková, 2015, p. 242).

Disciplinary rewards are appropriate for motivating the cops. Everyone wants to get a reward, or be promoted. Each form of the reward increases the final wage size, some in the deal - rank and some instantly, and one-time higher reward.

On the other hand, it is important to remember that many life-threatening police officers have a lot of merit of higher and lower values that are not valued in any way and there is no meaningful way of recording. If the citizen himself does not use his right to write a "thank you letter", which he does not even know, and few of them use it.

In cases where deficiencies are detected, and in the case of complaints, disciplinary proceedings against the policeman are commenced. Disciplinary measures - "punishments" are usually strictly due to the low severity of the police blame. The superiors punish usually biased and often sympathetic

From the above, since the competence of the assessment is left to a superior policeman who rarely has a real interest in objectively investigating objectivity, more than 99% is preventively granted a minimum of written reprimand. However, a maximum penalty of 15% for the three consecutive months in which the police officer is not entitled to a possible full-time salary may be punished by the maximum penalty.

According to Kočišová et al. (2017, p. 90-96) the source of objectivity is the weak ability of police officers to defend his subordinate's intervention. Of course, the fear of being punished, or even a higher instance, due to the failure to redress his subordinate cop, is also attributable. Punishment is the easiest procedure for operative management to "cover up", which in turn causes the inefficiency of management

and, in particular, of motivation. This may be counterproductive and leads to a rapid decrease in trust in subordinates to superiors. There is a weak competence of management and motivation. A possible way of doing this would be adequate supplementary training of operational management in the management field. A smoother and more open communication between walkthroughs and management. A good idea would be appointment to the post of directors based on psychological assessments that would indicate in advance what kind of personality is and whether the person is suitable for the post of head or director.

The most important, or even key, motivational factors clearly belongs to the superior himself, who acts as an operational manager and is therefore in charge of grooming or service performance.

From an operational police manager, it depends on:

- attitude towards the robot in the walkers,
- creating an acceptable working climate (creating a friendly environment and working climate, working climate),
- Competence (adequately achieved education and the ability to advise and decide in crisis situations so that it is mainly to the merits of the executive and the police corps),
- impartiality (to all subordinates approaching the same - not making favorites) could be called "Solomon's decision",
- the ability to defend its subordinate team and individuals and the results of the work,
- Openness of the environment (for example, not creating secrecy, concealing important facts).

It is in the above mentioned points that the most frequent shortcomings are also caused by incompetence, since the superiors are not the ones who have the necessary education with the termination of the simplest higher education study which has nothing to do with the managerial education. There is also an educational deficit and a contradiction in deeds and deeds, thus disturbing the motivation of the executive staff who can't subsequently follow the correct working procedure and groupage of persons, defamation, envy and ignorance of the ratios and laws necessary for the performance of the service, which should be subordinated to the superiors.

Police Officer as a Motivation Factor

Proper motivation depends largely on the form of senior management, where in general, for years, he has been practicing an authoritative way of managing, which still persists. Nowadays, there is also a

noticeable shift in this area. In order to create an ideal operational manager in the Police Force of the Slovak Republic, it is important to achieve an authoritative method of management that has a significant presence in the police department in combinations with other forms of governance that could be beneficial in the form of Participatory, Consultative, Benevolent. Each style has its clear advantages.

In the authoritative way, the task is routinely determined when all decisions are made without any involvement of the subordinates. In the armed forces, it has its justification, where it is necessary to respond quickly and promptly to the situation that needs to be

tackled uniformly (Nováčková, Milošovičová 2011, p. 12).

For example: (a single interference against rioters, armed breakdown, stabilization of the security situation on the roads, but also solving problems with the migrant crisis ...).

The disadvantage of this form is that there is an absence of knowledge and opinions of those who deal with problems directly in normal working hours who know the real situation in the field and where such knowledge would lead to a simpler and more effective solution to the problem.

Fig. 1. Proposal of a proportional distribution of the method of motivating church management - own resource

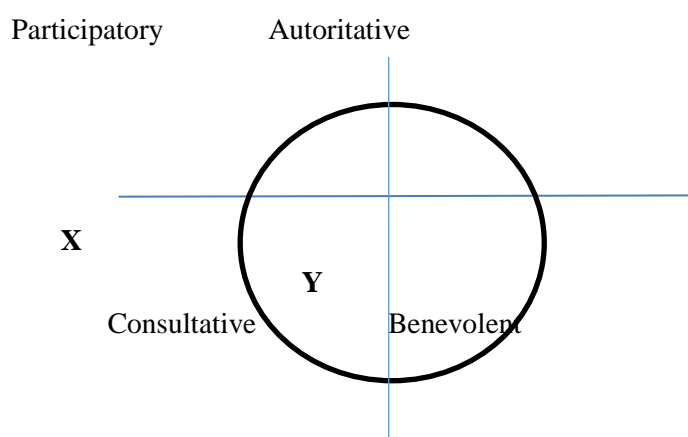


Figure 1 - graphical design of profiling the way of managing the operational manager of the direct stimulating walker, where the X and Y axle axes divide the modes of control, with the circle showing the whole personality and the overall content of the modes of control. The internal content of each management redistributes and modifies the X and Y axes. The figure shows that dominance in management remains in the authoritative management as armed forces are a specific category where authority is needed, since in national security cases, authority is unambiguous and in some cases directivity is necessary and has its merits.

In other ways, it is necessary to focus only on the best they offer.

In the case of benevolence, it is a possibility to create a partner environment where the manager trusts his subordinates and, in many cases, makes decisions about them. From practice, it is known that each cop has his robot and it depends mainly on him as he does not help himself in the field alone or together with his colleague. The manager should have the ability to trust his / her subordinates if he, too, has made his / her profile profitable.

From a consultative approach that encourages two - way communication, basic decisions should be made at the highest level due to predominant tactical strategic management and a stable hierarchy. In particular, positive tools, such as rewards, should be used for motivation.

In the participatory form, the active involvement of subordinates in the decision-making process is encouraged, the operative manager should trust the subordinates similar to the benevolent style to the extent that it would be possible to set the goals and create a favorable environment for their realization, the actual way of realization is left to the subordinates, basic cases - common verification of notification, traffic situation and associated controls (Mittelman et al., 2015, p. 745-752).

From Fig. 1, it can be seen that the highest volume, or a more balanced management, should be authoritative, but with a substantial part of the participated form to which the consensual and benevolent style poses will be associated. This should include a professional psychological model of a police manager. Creating a given view is a way of ideally mixing all of the four forms mentioned into one personality who, using all the features, should be able

to greatly motivate shooters. It must be remembered that the times of socialist rule can't be applied in the 21st Century as society as well as gay cops over time change and adapt to the surrounding environment. For motivation skills, the approach of operational management should be changed to the base of policemen performing the work in the so-called first line, on the street (Srebalová, 2008, p. 88).

Motivation in the Police Force of the Slovak Republic should have and should take into account a good vision:

The supervisor should be able to tell what is to be done, what the patrol must concentrate on (eg, increase patrol activity in a particular district or city districts and on certain days), have the ability to explain why certain tasks need to be done - their meaningfulness by increasing the number of theft of metal canal covers on the roads and the resulting vehicle accident problems).

A regular field policeman should be given the opportunity - to adjust the time of the service, or to set up a service, depending on the purpose of detecting the perpetrators, informing each police officer of the news about a particular case and his list of suspects, committing similar acts, possibly enriching the photographic documentation or magnetic boards each policeman could add his or her knowledge or experience and thus create the reality that the perpetrators are achievable.

According to Mrva et al. (2009, p. 46), Visions should be in the interest of mercenaries to establish remuneration as well as successful individuals depending on the state of emergency. The form and amount of remuneration should be set. Possibly, the introduction of the "best-of-breeds" on which the success stories would be displayed with their photographs, with a thank-you or praise letter from a senior police officer, but mainly from the civilian population.

The case should be formulated and sketched out on the already mentioned magnetic board accessible to anyone in the department and outlined with the basic points of support necessary to relieve work (time of occurrence, persons who have committed a similar act, witnesses, what happened) .

Field policemen should not be bordered and burdened with strong bureaucracy and predetermined fixed positions where the hours should be at one point in every weather, as to deal with service tasks should approach a certain humanism and, in particular, a healthy attitude. It should consist of the flexibility of its own path to achieve the stated goals (Vrabko, 2013, p. 67).

Conclusion

The work was focused on the motivation of the civilian population, but primarily on the members of the Police College of the SR working in the field. All motivational tools motivated by members of staff can be summarized as follows: regular wages, police rank, risk premium, personal appraisal, shift work and the associated bonus, the severance bonus, the incentive capacity of the manager.

On the basis of analyzes of the current models of motivation and methods of management of members of the Police Force SR, optimization has been determined and further applied to an armed state component whose functioning requires a special approach. The aim of the thesis was to review and analyze the standard forms of motivation that have been losing their effectiveness for a long time, leading to apathy and possible work stagnation or even resignation. Leveraging was also a necessity for continuous training of operational management. Its visibility from the private sector is also crucial. The work shows determinants of motivation in the time line and answers to the hypothesis. At present there are misused tools in the motivation process of the members of the staff who have experienced a decline in the motivation of the members of the Police Force of the Slovak Republic, which has been fully confirmed.

However, long-term observation has the obvious effect of losing the one-time pay, but it is a high probability that the cop will forget about it in the short term. While promoting the promotion symbol and thus the rank is visible and reminds some pride of every service performed for which it is awarded in the long run even though the low, but stable, bonus attached to the rank awarded.

The thesis outlined the theme of dismissal as one of the basic motivational aspects that the cop is waiting for at the end of his professional career.

Management methods were confirmed, confirming the hypothesis, where among the motivational factors should clearly be included also the superior who performs the function of the operative manager. He has the competence to lead the team, and from other things he just needs to have incentive tools to lead the team, with the operational manager depending on how the individual cops will build a robot. It should create an acceptable working climate (creating a more family environment, working climate), competence (adequately achieved education and the ability to advise and decide in crisis situations), impartiality, and so on all subordinates to approach the same, to ensure the openness of the environment (not to create secrecy,) to apply the ability of a clear leader and to

be able to defend his subordinate team and individuals and the results of the work.

With proper motivation, much of it depends on the form of senior management, where, in general, the authoritative management is practiced for many years and continues to exist until today, even though there is a noticeable shift in this area. In order to create an ideal operational manager, it is important to achieve an authoritative method of governance that has a significant presence in the Police College in combination with other forms of governance that could be beneficial in the ways of Participatory, Consultative, Benevolent. Each style has its clear advantages. In the right mix of the use of available tools, it is possible for a competent manager to create

a performance-oriented, productive, positive-motivated environment with the bonus of more satisfied subordinates who would take their honest profession as a meritorious and meaningful activity with a good vision and recognition of the population.

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MOTIVATION OF PUBLIC SECTOR EMPLOYEES

Jozef HABÁNIK, Adriana MARTOŠOVÁ, Monika GULLEROVÁ

Abstract

The concept of public administration has been the subject matter of scientific interpretation in social, political and legal theories both home and abroad. In general, there has been a consensus on the two components of public administration, i.e. state administration and local government. There have been many interpretations of the concept of public administration. The concept of public administration is central to administrative law. Its origins can be traced back to Roman law from which it spread to other languages. The current approach to the interpretation of such a complex and dynamic phenomenon as public administration can be objected its jurisdictional nature since less attention is paid to opinions on the effectiveness of public administration and society and the need to address the related problems. When a crisis occurs, orders are falling and companies are dismissing employees. Public sector, however, follows special laws and regulations. Working for public interest is essential in good times as well as the times of crisis. This makes the public sector missions distinct from those of the private sector. Motivation plays a key role in both sectors. Motivating employees is one of the key functions of managers. Mistakenly, monetary incentives are considered to be the best motivational tool. What does really motivate public sector employees? There are various prejudices about the factors of motivation in the public sector. The paper addresses the motivation of public sector employees and its distinctive features as well as the key role that managers play in employee motivation.

Key words

Employees, manager, motivation, market, private company, public administration, wages, remuneration

JEL Classification: H70, H83, Z00

Introduction

Public administration and motivation have been dealt with by many authors both home and abroad. In any case, public administration is about managing the issues of public interest. The process is subject to public control within the public sector whose people are parts of. Kútík and Karbach (2011) argue that public administration refers to real and work-related activities during its actual functioning in a given social system under certain historical circumstances, and to the structure of the organization and the management of state administration and self-government. For public administration and any other business entity to work smoothly and efficiently, employee motivation is a must. It is much more demanding to motivate public sector employees than private sector employees. The paper addresses the public employee motivation as opposed to private sector employee motivation, and the key role of managers.

Goal and Methodology

Employee motivation aims to achieve as high performance as possible. When motivated correctly, it is easier to attain the goals set. The purpose of the paper is to direct the attention towards the public employee motivation based on the analysis of the public sector reward system. The data were gathered from the Statistical Office of the Slovak Republic and used to compare the wages of employees working in Public Administration and Defence Sectors: compulsory social security contributions. The theoretical section gives an outline of available and recent relevant information whereas the empirical section provides an analysis of the findings.

Findings

The research findings are presented both theoretically and practically. Wages is considered to be the driving force for improving employee performance. In public sector, however, employees can be motivated by other incentives, such as training or educational opportunities or health care schemes. Other incentives could include the positive recognition of employees' work, a comprehensive system of fringe benefits, employee of the month

program. This program has been successful in Japan and other Eastern cultures. It has been frequently used in the US as an important component of motivation. Being named employee of the month is a great honour in the workplace with much positive feedback from colleagues.

Theoretical framework

In order to define the concept of public administration, its relationship to public sector must be specified. In any case, public sector is an area that influences significantly the overall living conditions of people and economic development of societies. Kútík and Klierová (2013) perceive the public sector as a part of social reality or a subsystem of individual areas of social life that are owned by public and subject to public scrutiny. The mission of public sector is to address social, economic and political issues by applying certain procedures. Thus, public administration is a subsystem of the public sector. Public administration is commonly referred to as administration. In professional literature, several authors have dealt with issues of public administration and motivation. Even sociologists and historians have dealt with the concept of administration. If one wanted to trace back the origins of administration and its management, one would need to study early examples of administration practices in ancient Egypt and China. This issue was also addressed by Keller who said that "we had not quite been successful in achieving the excellence of ancient Egyptian and Roman authorities or reports". In the late 20th century, the concept of public administration emerged in various works that addressed the so called New Public Management. According to Hasprová (2007), public administration is a complex and unclear social phenomenon that addresses the relationships between the state, society, citizens, the state as a whole and its territorial and regional entities.

Motivation is essential in any organization, not excluding public organizations. It is a challenging task to motivate employees; therefore the issue of motivation must be paid close attention.

Employees working in businesses, organizations, health services and education sectors, government or

local government institutions want to be motivated not only with wages but also some other incentives. There have been several theories associated with motivation. They have mainly emphasized the importance of meeting the employee needs and examined the factors of motivation. Any organization of today needs to have their employees motivated.

Among the most notable are the theories by Maslow, Herzberg, Mclelland and McGregor. Maslow argued that motivational theories are based on human needs and their satisfaction.

Thus, motivation is a type of specific psychic regulatory activity and one of the highest forms of psychological determination of activities. Motivation helps develop talents, achieve new goals, and above all, act and think actively for stimuli to occur. Živčicová (2006) maintains that activating factors, such as motives, needs, interests, attitudes, aspirations, life goals, and values need to be paid close attention to. She also argues that the term motivation is derived from Latin word *motio* with the meaning movement, passion. It provides us with a clear picture of what a person is experiencing, what s/he longs for, what s/he detests, what s/he is trying to achieve and what s/he wants. According to Vojtovič (2008), motivation meets employee needs and can also increase the return on investment in human resource development.

Motivation is influenced by various factors, both internal and external. Motivational factors are essential to effective employee performance which is supported by Armstrong (2007) who argues that employee performance depends on these factors and the value of importance that is attached to each of them. This was researched by Herzberg who came up with top ten factors that affect the work performance of employees.

Research section

The research section focused on the comparison of employee salaries in the Public Administration and Defence sector: compulsory social security by NUTS III regions. The data are for businesses and organizations with 20 or more employees, including employees working abroad.

Table 1. Employee average nominal monthly wage (EUR) in Public Administration and Defence sector: compulsory social security

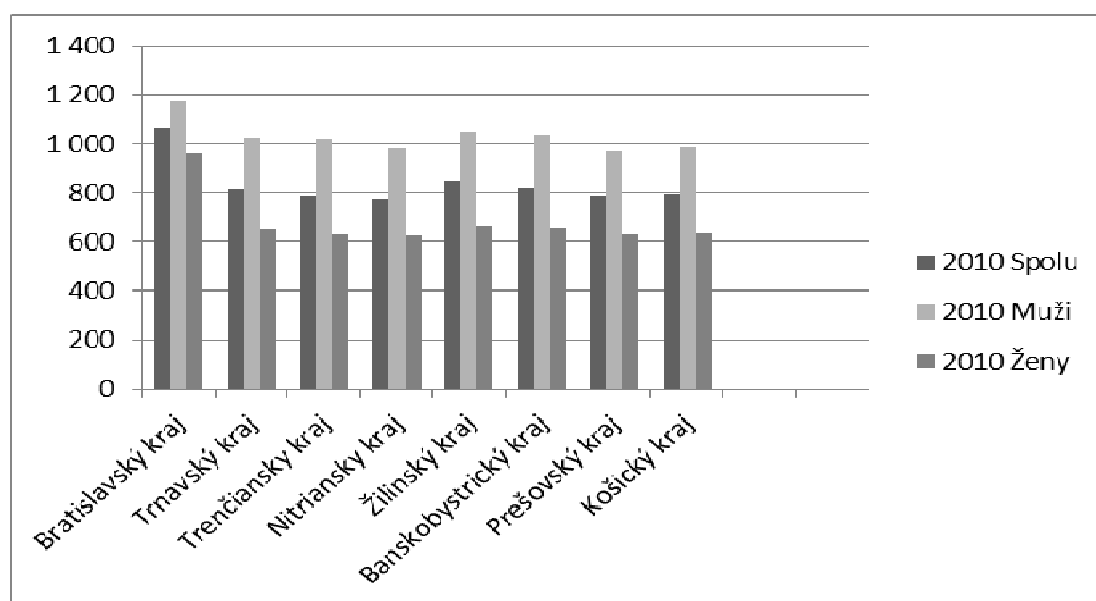
Regions	2010		
	Total (EUR)	Men (EUR)	Women (EUR)
Bratislava region	1,066	1,174	958
Trnava region	812	1,025	654
Trenčín region	789	1,016	632
Nitra region	771	982	624
Žilina region	844	1,053	664
Banská Bystrica region	818	1,035	660
Prešov region	786	968	631
Košice region	793	988	639

Source: Authors' own elaboration based on the data from the SO SR

Table 1 shows the data on the average nominal wages as well as the gender pay gap. In 2010, the highest wage was in the Bratislava region with

a difference of 2.6% between genders. The lowest nominal wages was earned by employees in the Nitra region and Prešov region.

Graph 1. Employee average nominal monthly wage (EUR) in Public Administration and Defence sector: compulsory social security



Source: Authors' own elaboration based on the data from the SO SR

The data on the employee average nominal monthly wage by sex and region are shown in Graph 1. The highest average employee wages was

recorded in the Bratislava region and the lowest wages in the Prešov and Nitra regions.

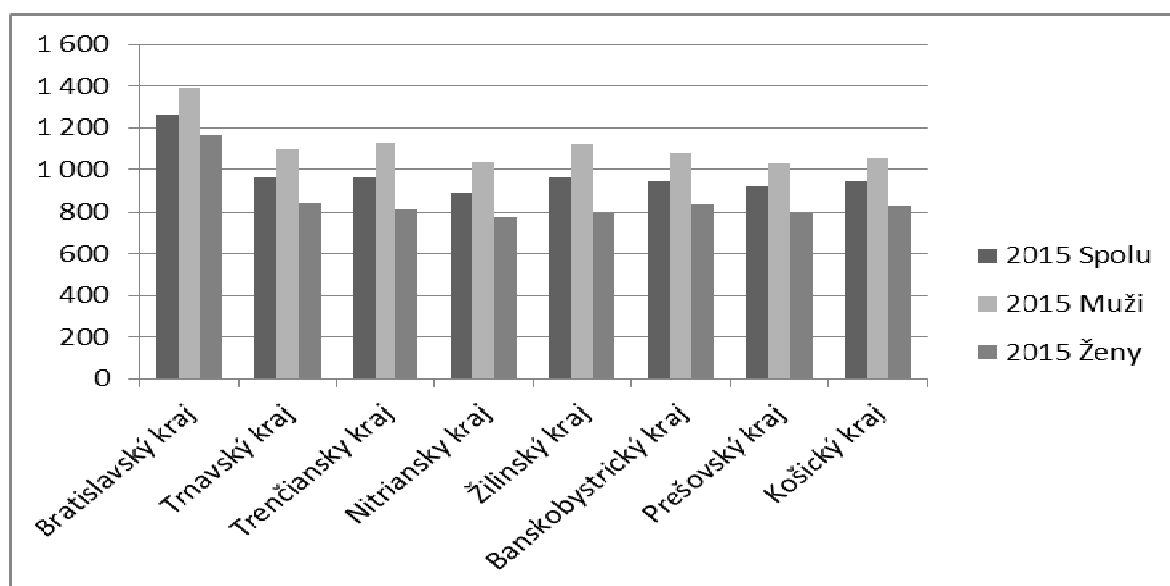
Table 2. Employee average nominal monthly wage (EUR) in Public Administration and Defence sector: compulsory social security

Regions	2015		
	Total (EUR)	Men (EUR)	Women (EUR)
Bratislava region	1,262	1,391	1,167
Trnava region	964	1,097	847
Trenčín region	959	1,127	814
Nitra region	890	1,032	775
Žilina region	963	1,121	795
Banská Bystrica region	940	1,081	836
Prešov region	916	1,026	794
Košice region	940	1,052	835

Source: Authors' own elaboration based on the data from the SO SR

Based on the data from the Slovak Statistical Office, average monthly wages grew in 2015 for both men and women in comparison to 2010. It follows

from Table 2 that the average monthly wages of men grew above EUR 1,000 in all 8 Slovak regions whereas that of women only in the Bratislava region.

Graph 2. Employee average nominal monthly wage (EUR) in Public Administration and Defence sector: compulsory social security

Source: Authors' own elaboration based on the data from the SO SR

It follows from Graph 2 that the average monthly wage of men grew to EUR 1,000 in the following regions: Nitra region (growth by 0.50%), Prešov

region (growth by 0.58%) and Košice region ((growth by 0.64%).

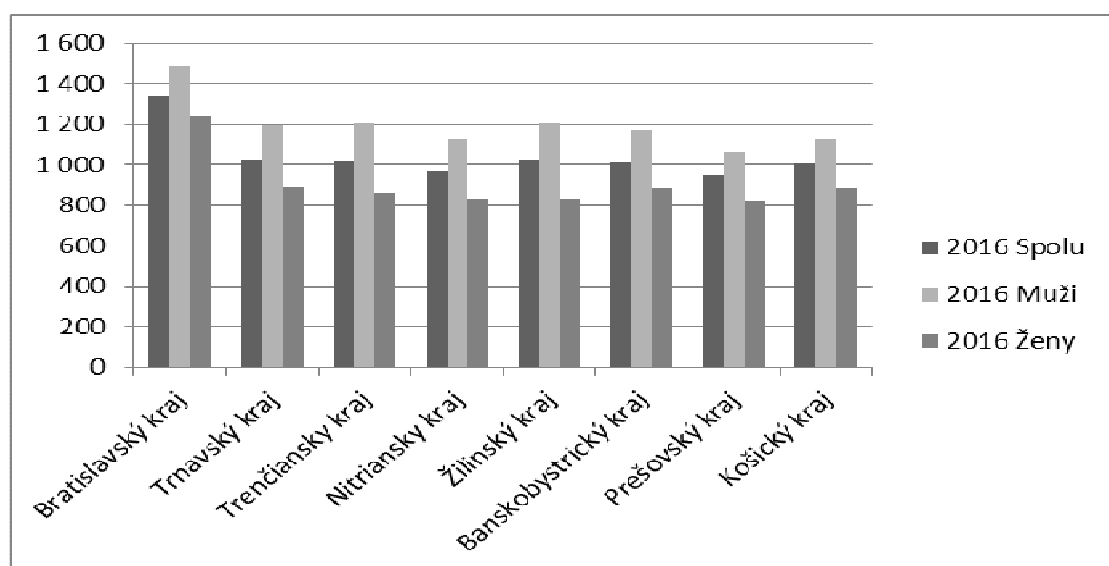
Table 3. Employee average nominal monthly wage (EUR) in Public Administration and Defence sector: compulsory social security

Regions	2016		
	Total (EUR)	Men (EUR)	Women (EUR)
Bratislava region	1,345	1,492	1,240
Trnava region	1,029	1,192	892
Trenčín region	1,015	1,206	860
Nitra region	966	1,127	835
Žilina region	1,025	1,207	831
Banská Bystrica region	1,008	1,172	888
Prešov region	947	1,067	825
Košice region	1,005	1,126	887

Source: Authors' own elaboration based on the data from the SO SR

As seen from Table 3, the employee average monthly wages grew also in 2016. The average monthly wages of men grew above EUR 1,000 in all 8 Slovak regions whereas that of women only in the

Bratislava region. The highest wages were recorded in the Bratislava region and the lowest wages were recorded in the Prešov and Nitra regions.

Graph 3. Employee average nominal monthly wage (EUR) in Public Administration and Defence sector: compulsory social security

Source: Authors' own elaboration based on the data from the SO SR

Graph 3 shows that the average monthly wages of men grew by 1.01% in the Bratislava region. The wages in the Bratislava region was the highest of all eight Slovak regions for both men and women. The average monthly wages of women grew by 0.73%.

The lowest wages for men was recorded in the Nitra region, Prešov region and Košice region. The lowest wages for women was recorded in the Prešov Region, Žilina Region and Nitra Region.

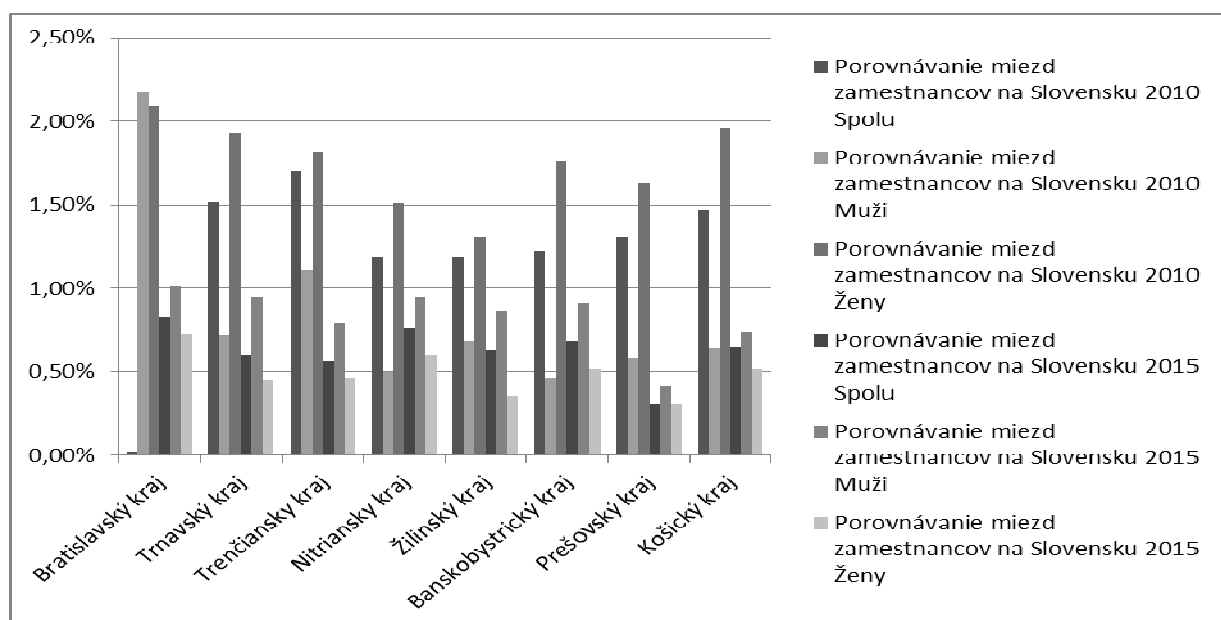
Table 4. Comparison of employee wages in the Public Administration and Defence sector: compulsory social security in %

Regions	Comparison of employee wages in Slovakia					
	2010			2015		
	Total	Men	Women	Total	Men	Women
Bratislava region	0.02%	2.17%	2.09%	0.83%	1.01%	0.73%
Trnava region	1.52%	0.72%	1.93%	0.60%	0.95%	0.45%
Trenčín region	1.70%	1.11%	1.82%	0.56%	0.79%	0.46%
Nitra region	1.19%	0.50%	1.51%	0.76%	0.95%	0.60%
Žilina region	1.19%	0.68%	1.31%	0.63%	0.86%	0.36%
Banská Bystrica region	1.22%	0.46%	1.76%	0.68%	0.91%	0.52%
Prešov region	1.30%	0.58%	1.63%	0.31%	0.41%	0.31%
Košice region	1.47%	0.64%	1.96%	0.65%	0.74%	0.52%

Source: Authors' own elaboration based on the data from the SO SR

In 2009, the first negative effects of the economic crisis and recession could be observed. It was a period of time when, among other effects, the wages stopped growing in Slovakia. From 2010 to 2015, the average wages grew by 2% - 3%. In 2010, the average wages grew highest in the Bratislava region – average wages of men grew by 2.17% and that of women by 2.09%.

The lowest wages growth of men was recorded in the Banská Bystrica region (by 0.46%) and that of women in the Žilina region (by 1.31%). In 2015, the lowest wages growth of men by 0.41% and women by 0.31% was recorded in the Prešov region. Graph 4 compares employee wages in 2010 and 2015.

Graph 4. Comparison of employee wages in the Public Administration and Defence sector: compulsory social security in %

Source: Authors' own elaboration based on the data from the SO SR

Graph 4 illustrates the comparison of wages between 2010 and 2015. All figures are expressed in %.

Conclusion

There have been many changes, including redundancies, in the public administration recently. In case of redundancies, those left behind get an increased workload which makes them work long hours and feel frustrated. This all leads to employee dissatisfaction. One of the dimensions of work satisfaction are personality characteristics that let employees adapt to the increased demands resulting from changes. There are sound assumptions for believing that stable, innate personality traits predispose people to higher or lower job satisfaction in public administration. In general, public servants have better working conditions than other categories of employees. In most EU countries, public administration careers are considered to be more secure and more attractive than careers in private companies. Public administration careers are nine-to-five jobs with flexitime arrangements offering better training opportunities funded by public administration institutions, higher and stable wages, job security, and so on. It was found that the average monthly wages of public servants rose above EUR 1,000 especially in

the Bratislava region since 2015. Based on the theoretical and practical knowledge, however, motivation should be supported in any organization. Employees are ready to improve their performance especially when their work is appreciated and recognized.

It is crucial for superiors to be able to motivate their subordinates, which requires the knowledge on the process of motivation. Superiors need to know what motivates people, what their needs, interests, values and aspirations are. Extrinsic and intrinsic motivators vary from one individual to another, but generally all employees want to work in growing businesses, want to be fairly compensated and want to have the potential for professional and career development. There are, however, differences between public and private sectors. Unlike the private sector, public servants are not motivated by performance as they are paid according to their respective salary grades. Thus, work motivation in the public sector should be encouraged through the governmental revision of the salary grade system in light of measurable goals set.

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THE MOTIVATION OF SMALL AND MEDIUM ENTERPRISES TOWARDS CLUSTER COOPERATION FROM THE POINT OF VIEW OF HUMAN RESOURCES

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Abstract

In developed economies, the clusters are considered as an important tool for the development of small and medium-sized enterprises (SMEs) and increasing their competitiveness. The connection of SMEs in this form of network cooperation means for the better access to human resources, knowledge, results of research and innovation and many more. SMEs are important regional stakeholders in the cluster also in Slovakia. More than 40% of cluster stakeholders in Slovakia represents just SMEs. In this context, the main aim of this paper is to evaluate the main reasons that motivate SMEs in Slovakia for connection to clusters from point of view of human resources. We used the results of questionnaire method with a random selection of SMEs from Slovak regions. For evaluation of results, we used descriptive statistics and our hypotheses have been evaluated by means of chi-square method. Cluster cooperation can contribute to the development of SMEs in various ways. One of them is the development of human resources. It is possible to observe these issues from two points of view: from point of view of cluster as a whole and from point of view of individual enterprises (cluster stakeholders). In this paper, we try to provide some insight into this issue.

Key words

Cluster, competitiveness, small and medium-sized enterprises

JEL Classification: L26, O15, D22

Introduction

In recent years, the role of clusters has become increasingly important in both the analysis of urban and regional economies and in public and private economic development initiatives (Raines et al, 2002). Academic and policy discourses stress the advantages of clusters for cities, regions and economies seeking to compete in an increasingly knowledge-driven global economy (Cumbers and MacKinnon, 2006; Piperopoulos, 2012; Kordoš, 2016; Havierniková, Jašková and Krajňáková, 2016). From a microeconomic point of view, clusters are an appropriate tool for increasing the competitiveness of companies (Pavelková and Jirčíková, 2008). Clusters enable affiliates to improve their competitiveness and achieve higher performance. Clustering leads a firm to gain collective efficiency, which could hardly be achieved by an individual company alone (Karlsson, Johansson and Stough, 2005; Saha, Jirčíková and Bialic-Davendra, 2011). Thus, networking and strategic partnerships are an important precondition for business development, especially for small and medium-sized enterprises (SMEs) which are considered to be the economic pillars and the driving force behind employment, innovation Fenyvesi, 2015), and social integration in market economics (Breschi and Malerba, 2005; Barcik and Jakubiec, 2016; Dziwiński, 2016; Zeeshan, 2017). In the non-

financial sector in the EU-28, 99.8% of the companies operated in 2016 were small and medium-sized enterprises. These SMEs employed 93 million people, representing 67% of total employment and 57% of value added in the EU-28 non-financial sector (European Commission [online], 2017a). As well, data for small and medium-sized enterprises in Slovakia indicate that they are also no less important pillar and a stabilizing factor for the economy of the country and its regions. SMEs contribute significantly to the non-financial business economy in Slovakia, which represented 54.4% of total value added and 72.1% of total employment in 2016 (European Commission [online], 2017b). SMEs are important regional stakeholders in the cluster also in Slovakia. SMEs are the most represented category of clusters' members in Slovakia – this category consists of 49 % of all members in clusters (Havierniková, Okreglicka and Lemanska-Majdzik, 2016).

As follows from preliminary results of scientific project VEGA 1/0953/16 The evaluation of clusters' impact measurement on regional development of the Slovak Republic, among SMEs still missing the awareness of cluster cooperation. After an explanation of the principle of cluster cooperation, they could identify the importance that potential cluster cooperation might have for them. The connection of SMEs in this form of cooperation within the network allows achieving higher revenue or cost savings

through shared funding for research and development of new products, providing a skilled workforce, sharing marketing and promotional activities, sharing access to information, building logistics centres and many other activities addressed in a cluster. In this context, the main aim of this paper is to evaluate the main reasons that motivate SMEs in Slovakia for connection to clusters from point of view of human resources.

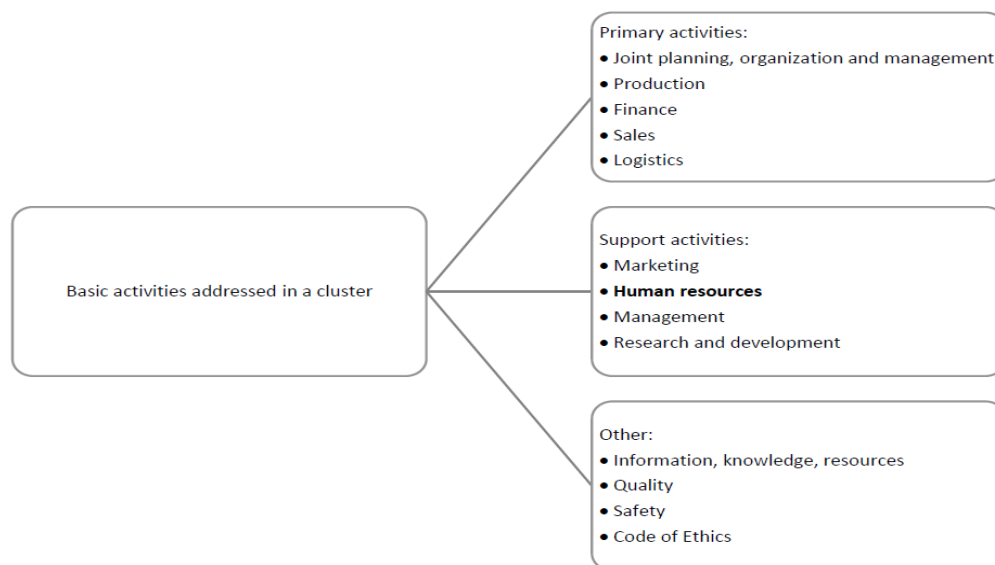
Theoretical Background

As stated by Bergman and Feser (1999), clusters are business-manufacturing companies and non-commercial organizations, for which group membership is an important element of the competitiveness of each member. Clusters bundle customer-supplier relationships or joint technologies or joint customers and distribution channels, or common labour markets and human capital. To understand the motivation of SMEs towards cluster cooperation, it is necessary to identify and study their network of relationships with all entities, including human resources that are the backbone of each organization. See also (Hitka et al. 2017) Crucial elements among the critical factors of an enterprise's success in a market environment are the employees (human resources), who ensure its performance by activating all other resources of the organization (Hitka et al., 2017, Hitka et al. 2018). According to Szerenos (2007), human resources play a significant role in the cluster concept as well as in a knowledge-based economy. In the era of globalization, human resources are viewed as a source of competitive advantage (Delery and Roumpi, 2017, Caha, 2017). Key activities within the cluster include human resource management. People are the most important source in the enterprise as well as in the cluster, so work with them should be done systematically and on a long-term basis. This is primarily about planning and providing qualified staff and experts. Nor should their continuing vocational training be forgotten.

As stated by Pavelková (2007), the human resources area, their availability for companies and skills upgrading, is an important field for cluster cooperation. Cluster cooperation in the human resources area can take the form of joint training and education of employees by organizing courses, joint seminars and conferences, building training centres, etc. The cluster usually provides these activities in cooperation with educational institutions. They can

fund them with their resources or use project funding from different support sources. It is also important to co-operate with a cluster of secondary and higher education institutions in the framework of networking cooperation in formulating requirements for graduates of these schools according to the needs of the practice (the focus of study programs, curriculum modifications, etc.). The presence of strong backgrounds in the form of training capacities for a particular business area can attract investors and capital to the region. As described by Gajdová (2014) in the field of human resources, co-operation can take the form of increasing staff qualifications by organizing joint seminars, conferences, training courses, but also joint training centers. Financing of such activities can be carried out from own resources or can be used by means of projects, etc. According to Šimon and Troblová (2007), one of the advantages of the cluster can be the distribution of costs for the joint organization of seminars, conferences, lectures and workshops between several enterprises. Workshops can be organized as separate events or be part of larger national and international conferences. It is also important to cooperate with educational institutions (especially with secondary vocational schools and tertiary education institutions) in the field of human resources management. The cluster can thus directly select its potential employees, influence, and participate in their education. As stated by Saha (2012) there are several human resource management activities that companies can offer to enhance the levels of their human resources such as personnel administration, training and development, career development, talent management, manpower planning etc. Among them, clusters may organize education of employees in professional courses, regular schooling, joint seminars; conferences aided by various educational institutions or form a joint educational centre.

The cluster provides its members with support in a variety of activities. For a well-functioning cluster, it is essential that collaboration, support and trust of all cluster members are created and exploited in activities that are decisive for the cluster. These activities are an important building block for the competitiveness of individual members and the whole cluster. Based on a wide range of studies on networking and clusters in market economy conditions, basic activities that appear to be important in clusters were defined and divided into the following primary and support activities (see figure 1).

Figure 1: Basic activities addressed in a cluster

Source: Šimon and Troblová (2007, p. 71); own processing.

The cluster, by its very nature, facilitates the emergence of an internationally competitive business. Networking may help SMEs to expand their market in other countries. As Kumar (2012) stated, SMEs owner managers can develop better relationship in the foreign market by participating in international trade fairs and exhibition. To stimulate exports, possibly to support the cluster companies' entry into international markets, the cluster management unit serves as an access to information about foreign firms, markets, and, in particular, their trends, which can affect the intentions of companies positively or negatively. Břusková (2003) stated that the Management Unit allows for the organization of contacts with potential foreign partners, seeks and recommends financial security for export, is linked to specialized agencies and state programs for diversification of export markets for existing exporters and preparation of an export strategy for new exporters. Internationalization also means promoting clusters, companies and their products abroad, finding partners for joint ventures, and promoting joint ventures (Ruzzier and Antoncic, 2007).

The Research Methodology

Clusters contribute to development of SMEs in several ways. Important part of cluster cooperation is also the issues of human resources. The holistic view on this issue is very difficult and there is a gap in research studies that are focused on benefits that influenced from cluster cooperation from the point of view of human resources. In this paper, we tried to

evaluate the selected reasons related with issues of human resources in the context of cluster cooperation that are important for SMEs in case of their potential engagement into clusters.

This paper starts with a literature review in order to highlight the issues of human resources in connection with cluster cooperation. Next part is devoted to the results of questionnaire surveys realized in the frame of project VEGA 1/0953/16 The evaluation of clusters' impact measurement on regional development of the Slovak Republic. Finally, we will offer the implications for future research in the area of human resources in the context of cluster cooperation.

For this paper the hypothesis H1 was stated: For enterprises in the field of tourism, the selected reasons are more beneficial for cluster cooperation from point of view of human resources than for technological enterprises and vice versa. In order to confirm/reject this hypothesis, author used statistical method Gamma correlation coefficient. The gamma coefficient is a measure of the relationship between two ordinal variables. Gamma below zero means a negative or inverse relationship. Gamma, ranges from -1 to +1. -1 and +1 each indicate perfect relationships. No relationship is indicated by 0.

This type of correlation is often used for the evaluation of results within realized questionnaire surveys, see also Okreglicka et al. (2016). The partial results of realized questionnaire surveys are used for confirming/rejecting the given hypothesis. For achieving of main aim of this article, the answers from 760 Slovak SMEs are used. These numbers of

respondents consist of 380 tourism SMEs and 380 technological SMEs.

In the context of SMEs' participation in clusters from the point of view of human resources, the respondents evaluate following benefits influence from their potential participation in clusters:

B1: The increasing of employment.

B2: Common projects in the field of human resources.

B3: The organization of common seminars and conferences.

B4: The common trainings and education of staff.

B5: The cooperation with training agencies.

The survey was directed to enterprises of three size according the number of employees: micro (0-9 employees), small (10 – 49 employees), and medium sized enterprises (50-249 employees). The opinions of respondents about the benefits that influenced from potential cluster cooperation in the context of human resources were evaluated in scale from value of 0 - irrelevant to value of 5 - the most profitable.

There is a specific typology of clusters in the Slovak republic. According Slovak Innovation and Energy Agency, Slovak clusters are divided into two main group of clusters: tourism and technological. This typology was set also in our scientific project Vega. From this reason, this typology is also used in this paper. Technological clusters cover main economic branches: industry, agricultural, and energy. There are 7 clusters of tourism and 18 technological clusters in Slovak regions. Slovak SMEs play an important role in both economy of region as well as country. Their role in terms of production, employment generation, contribution to gross domestic product, added value, export, etc. is very critical. The SMEs also play crucial role in clusters. From the reasons stated above this paper is focused towards assessment of opinions of managers or owners from SMEs towards the benefits that influenced from cluster cooperation in the context of human resources. Table 1 present the basis characteristics of respondents. As we can see the largest sized category of respondents presents category of micro enterprises. (50,26% of tourism and 37,37 of technological SMEs).

The research results and discussion

Table 1. Characteristics of respondents

Sized category of SME	Tourism		Technological	
	number	%	number	%
0-9	191	50,26	142	37,37
10-49	158	41,58	124	32,63
50-249	31	8,16	114	30,00
Total	380	100,00	380	100,00

Source: own research

The percentage of respondents answers are given in table 2. By the highest rating value (5) the respondents rated the reason B1: The increasing of employment (13,68%) in case of technological SMEs. If we take into account also value 4, the important benefit for technological SMEs is also B4: The common trainings and education of staff (23,68%). For tourism SMEs, the highest % of value 5 obtain the

benefits B1: The increasing of employment (11,32%) and B5: The cooperation with training agencies (11,05%), but on the other side these benefits are not so important, because according rating value 0 they obtain highest percentage evaluation (B1 – 18,42% and B5 - 23,68%). From this reason in next part of paper, the distribution of respondents' answers is analyzed.

Table 1. Rating by SMEs' managers/owners answers

Benefit	Rating Scale						Total
	0	1	2	3	4	5	
B1TE	15,79	16,58	18,95	21,58	13,42	13,68	100,00
B2TE	7,37	16,84	21,58	28,42	17,89	7,89	100,00
B3TE	9,74	17,11	23,42	27,37	17,11	5,26	100,00

B4TE	6,32	13,42	17,89	27,11	23,68	11,58	100,00
B5TE	6,84	20,79	18,16	27,89	16,84	9,47	100,00
B1TO	18,42	14,74	16,32	23,42	15,79	11,32	100,00
B2TO	10,53	13,68	21,84	25,79	19,74	8,42	100,00
B3TO	22,89	16,84	18,42	20,53	14,21	7,11	100,00
B4TO	18,16	12,11	16,58	21,58	21,32	10,26	100,00
B5TO	23,68	13,68	16,05	23,42	12,11	11,05	100,00

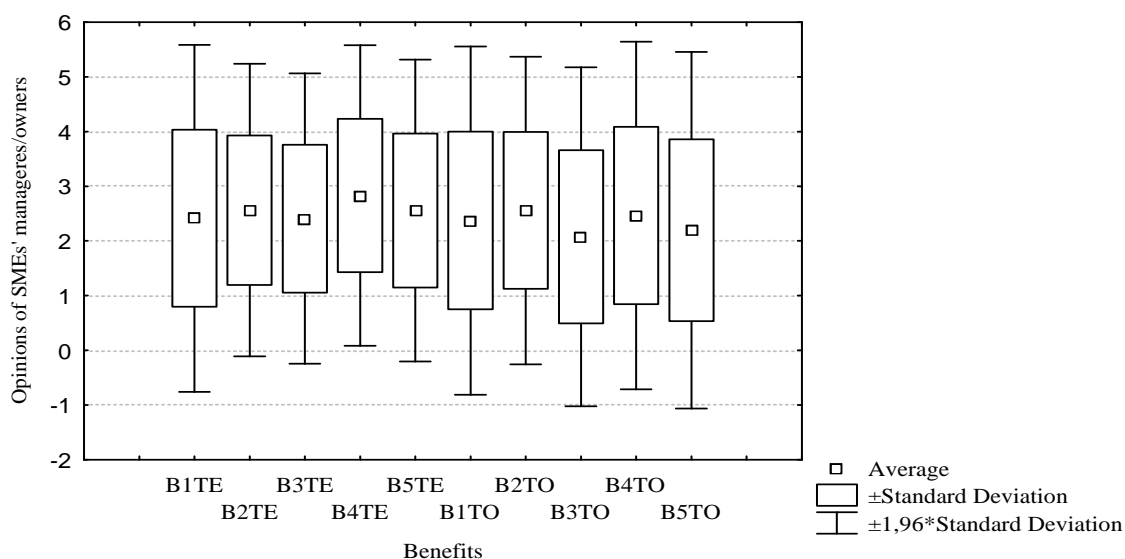
Source: own research.

Notes: B1: The increasing of employment, B2: Common projects in the field of human resources, B3: The organization of common seminars and conferences, B4: The common trainings and education of staff, B5: The cooperation with training agencies. TE – Technological SMEs, TO- Tourism SMEs

The analyses of the distribution of respondent's answers present Figure 2. We can generally state that the mean mostly under 3 in 5 point scale is not satisfactory results. The respondents due to category of tourism SMEs perceived as the most important benefit that influenced from potential cluster cooperation the benefit B2: Common projects in the field of human resources ($2,56 \pm 1,43$ points), the less

important is benefit B3: The organization of common seminars and conferences ($2,08 \pm 1,58$ points). For respondents from category of technological SMEs perceived as the most important benefit B4: The common trainings and education of staff ($2,83 \pm 1,40$ points) and the less important benefit B3 : The organization of common seminars and conferences ($2,41 \pm 1,35$ points).

Figure 2. The distribution of answers



Source: own calculation, TE – Technological SMEs, TO – Tourism SMEs

In the next step of our research, we diagnosed if there is any correlation between SMEs' choice of benefits and observed field in which SMEs operate. For this analysis the gamma correlation coefficient was chosen.

We stated null hypothesis at the 0,05 level. Since the obtained value for the gama correlation coefficient

achieve the range of values from -1 to 1, and the p-value $> 0,05$, than the null hypothesis must be accepted and we must conclude that there is not a statistically significant correlation between the two variables. Results are given in the table 2. Results showed that there is no correlation between assessed benefits of tourism and technological SMEs.

Table 3. The results of Gamma correlation coefficient

Compared benefits	Gamma	Z	p – value
B1TE&B1TO	-0,008563	-0,20626	0,836589
B2TE&B2TO	0,073285	1,72216	0,085040
B3TE&B3TO	0,028108	0,66305	0,507298
B4TE&B4TO	0,013145	0,31154	0,755386
B5TE&B5TO	0,069513	1,64475	0,100021

Source: own calculation,

Notes: $p < 0,05$, B1: The increasing of employment, B2: Common projects in the field of human resources, B3: The organization of common seminars and conferences, B4: The common trainings and education of staff, B5: The cooperation with training agencies. TE – Technological SMEs, TO- Tourism SMEs

To determine the significance of a Gamma statistic, a Z-score is calculated. The obtained value for the Z-score is then compared to the critical values of Z to determine if the correlation is statistically significant. The critical value for Z at the 0,05 level is $\pm 1,96$. The obtained value for Z falls within the range defined by -1.96 and +1.96. Therefore, the null hypothesis is accepted and we must conclude that there is no significant relationship between the two variables. In our research we can conclude that there are not differences in perceptions of given benefits from the point of view of business fields of SMEs.

Conclusion

At present, we can find many researches that are focused on various issues of clusters, but the issues of human resources is not elaborated in required level. The issues corresponding with this topic as how can the human resource activities support the SMEs' development, which type of human resource management is appropriate to use in cluster, which type of trainings could contribute to human resource management and many other are not elaborate in

appropriate way. Before the entering into cluster, for managers/owners of SMEs is the most important to know which benefits the cluster cooperation will bring them. Sometimes the relevant information are missing. Cluster cooperation can contribute to the development of SMEs in various ways. One of them is the development of human resources. It is possible to observe these issues from two points of view: from point of view of cluster as a whole and from point of view of individual enterprises (cluster stakeholders). In this paper, we try to provide some insight into this issue. From the results of realized surveys resulting, that from the point of view of SMEs' managers/owners who have some experience or knowledge about the cluster cooperation resulting, that this issue is not so important for them.

Acknowledgement

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CHANGES ON THE LABOUR MARKET IN SLOVAK REPUBLIC IN CONTEXT OF POPULATION AGEING

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Abstract

Population ageing along with migration belong to the most serious problems that contemporary demography is concerned with. Labour market of every country is influenced by economic, social and demographic trends. Various demographic changes, such as change in population age structure have a significant impact on a labour market of every country. The aim of the article is to analyze and identify changes on the labour market in the context of population ageing in the sectors of national economy in Slovak Republic. This article deals with demographic trend such as a population ageing and its impact on the labour market in individual sectors of national economy in the Slovak Republic. We consider, that systematic analysis and research in this field can contribute to the solution of unemployment problems, but also to the ability to prepare for the future changes in the sectors of the nation economy and also the ability to exploit population 65+ and migration as the primary source of the labour shortage.

Key words

population ageing, migration, labour market

JEL Classification: H55, J11, J10

Introduction

Aging of the population is becoming an increasingly frequent subject of discussion in today's society, not just among experts. The aging of the population is perceived as a gradual increase in the part of post-productive element of the population of entire population. This phenomenon begins to be realized not only by scientists from field of science and research, but also by representatives of governments or by other inhabitants. Changes in the age structure of the population are currently not a threat to the labour market, but the prognoses are critical and therefore it is necessary to solve this issue today. Many experts from different areas solve this issue mainly because of its immediate impact on the economic level of the landscape or the quality of life of its inhabitants. They stress out the necessity to monitor this phenomenon, focusing on monitoring the correlation between demographic population development and the development of the economic situation. The Slovak Republic, like most countries, is currently experiencing significant demographic changes (Skibiński, 2017). Dynamic transformation of these processes also leads to significant reversals in the labour market. Therefore, labour market indicators are one of the main indicators of the country's economic performance, but also a prerequisite for its own development. The aging of the population is undoubtedly one of the current demographic trends in population development in Slovakia, which is closely

related to the decrease in labour productivity, but also with the growing shortage of labour force in the various sectors of the national economy. The Slovak Republic is experiencing significant economic growth today, but it is threatened by an unfavorable demographic situation at the same time. Given that the aging process is not a short-term process, its effects can be affected by effective short-term measures, which however require long-term, complex solutions with an impact on different aspects of life in society (Káčerová, Ondačková 2015).

Goal and Methodology

The main goal of the contribution is to analyze and evaluate the impact of population aging on employment in individual sectors of the national economy in the Slovak Republic. The paper focuses on reviewing the effects of demographic aging on the labour market in order to propose effective measures to address the emerging labour shortage. The benefits of exploring this issue can be the proposal of effective incentive tools to involve the aging population in the work process in order to achieve higher economic activity, address labor shortages, improve the quality of life of the population, or eliminate the poverty risk of this population.

In order to reach our primary goal, we also set a number of partial goals that will help us to:

- analyze demographic and socio - economic situation in individual regions of the Slovak Republic,
- elaborate documents for the assessment of the correlation between the influence of demographic indicators on the development of the situation in the individual sectors of the national economy,
- subjectively evaluate the identified problems and the proposal of effective measures for their solution.

In order to reach the main goal and the partial goals of the contribution, it will be desirable to proceed in accordance with a predetermined and developed methodological approach that involves the application of different statistical methods and techniques for efficient data processing and the obtaining the results.

- analysis of the theoretical and empirical surveys, scientific articles and monographs focusing on issues of population aging and its impact on the labor market,
- analysis, acquisition and processing of statistical data from demography and the labor market,
- processing of statistical data by means of mathematical - statistical methods such as regression analysis, index methods:

$$\text{Index of population aging: } I_s = \frac{P(65+)}{P(0-14)} * 100 \quad (1)$$

- comparison of processed data with the application of graphical methods,
- summary of the results obtained.

Findings

The current trend of population aging is an undeniable reflection of the socio - economic situation in society. Whereas in the past population aging was considered to be a demographic phenomenon for the labor market, natural and desirable, today and especially in the near future it will rather be a barrier to its functioning and balance. Aging is a problem that almost every country encounters today. However, this demographic phenomenon has not occurred suddenly, but its consequences are long-term. An increase in the number of post-productive people in the overall population leads to a decline in the workforce. Lack of labor then exerts pressure on political and economic decisions that already lead to prolongation of retirement age. If, despite unfavorable demographic trends, we want to maintain a balance on the labor market, we should focus our efforts on creating conditions for post - productive labor-saving processes, for example by adapting social and health care services. Of course, the problem of aging cannot be just a negative phenomenon. Many countries, in

their development strategies, focus on creating opportunities how to involve this population in active life even after reaching retirement age. By exploiting the untapped potential, we can not only maintain the economy but also improve the quality of life of this population (Makienko, Panamareva, 2016).

1. Labour market and population ageing

The labor market is the field where two interests - demand and supply for labor meet. While labor demand is represented by employers, job offers are represented by employees themselves who offer their skills and knowledge to the employer. The labor market is considered to be the main component of every economy, characterized by its close links to the capital market and the goods and services market (Dixon, 2003).

Therefore, there is a correlation between demand for labor represented by potential employers and the job offer that jobseekers represent. The composition of jobseekers is largely determined by demographic characteristics such as age or education. On the basis of these and other aspects, candidates get the opportunity to apply for jobs in the various sectors of the national economy (Hong, Sungweh, 2015).

Aging is also generally defined as a change in the age structure of the population, which is characterized by a gradual increase in the number of post-productive populations in society. (Shrestha, 2000).

Aging is a global demographic process, which is the result of the previous economic and social development of the population (Krajňáková, Vojtovič 2017).

Population aging is the result of improving the health of the population along with a decline in mortality rates. Another factor stimulating population aging is the process of long-term reduction of fertility, but also the overall growth of living standards or improvement of the life quality (Grmanová, 2017).

Aging is a social problem which requires a common approach, strategy, but also understanding by the younger generation. (Chomik, McDonald, Piggott 2016).

Continuous deepening of population aging fundamentally changes not only the structure of family composition but also consumption, labor market situation, pensions, or social and health care system (Da Roit, Van Bochove, 2017).

Demographic changes are a natural part of the development of society, but their implications are increasingly reflected in employment policy. It is for this reason that national development strategies should strive to build a working environment adapted to the

educational, professional level or age of the workforce (Strunz, Vojtovič 2014).

The social trend of population aging suggests that currently the major segment of the population in the country is made up of people aged 55+. If this problem arises with the decline in birth rates or migration, there is a question of who will work if the component leaves the labor market. With its dominance and necessity, the aging component of the labor market population is considered to be risky and most endangered by unemployment despite its stability, long-term work experience, or willingness to work for lower wage rates. (Krajňáková, Vojtovič, 2017).

Authors Sobolewska and Niewiadomska (2016) report that population aging negatively affects the labor market and overall economic growth in the country, which can be largely eliminated by the timely government response. Their survey, however, confirmed that population aging will lead to a sharp reduction in the gross domestic product and an increase in the economic burden on the population over the next decade, irrespective of policy decisions in this area.

Lisenkova et al. (2013), on the other hand, takes the view that no political intervention will help to eliminate the employment problems caused by demographic changes in the form of aging population completely, as it is a natural phenomenon in society.

Choi and Shin (2015) in their publications point out that this trend appears as yet a factor that is most likely to jeopardize the structure of the national economy and the decline in the workforce.

The effectiveness of labor market policy, or the provision of professional counseling in finding work

has been and is always a matter of intensive discussion. However, many topics in this area remain unresolved. Authors Card, Kluve, Weber (2010), in their studies, call for the need for progress in the processing of statistical data that would facilitate progress in the allocation and adaptation of employment support instruments in the various areas of the national economy.

The trend of population aging is also directly related to European countries. The main cause of population aging can be seen as the result of significant changes in reproductive behavior. (Sanderson, Scherbow, 2008).

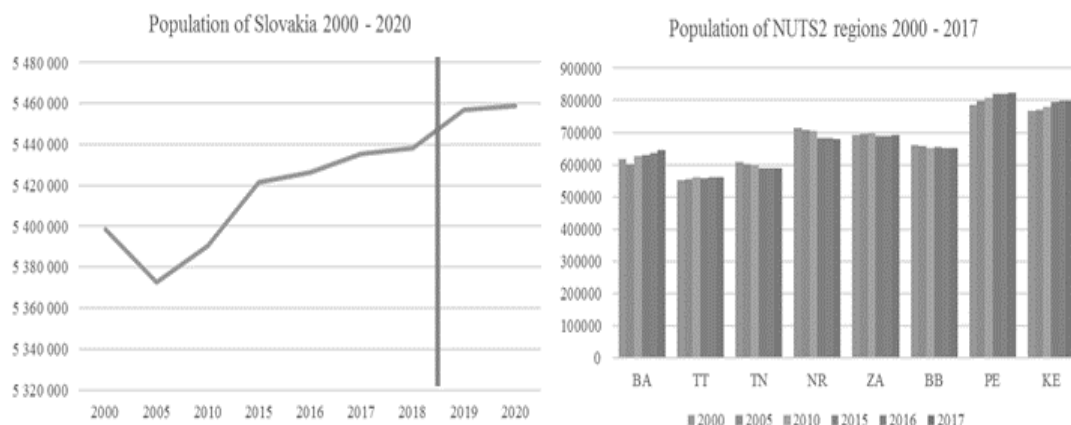
The Slovak Republic has been a proper member of the EU for over a decade. The labor market is among the top priorities in EU strategies, which is in line with the needs of Slovakia. The adoption of the Europe 2020 strategy is therefore confirmed and stresses the need to increase employment and social inclusion, including older people (Lubyová, Štefánik, 2015).

Post – productive population that takes part in work process can be used as the primary source to substitute the absent workforce, but also at the same time using this population segment reduces its risk of poverty threat considering the increase and stability of disposable income (Gautum, Bratt, 2016).

1.1 Demographic development in the Slovak Republic

The Slovak Republic is currently experiencing significant demographic changes in the area of population development. These demographic changes can influence the labor shortage in the future.

Chart 1. Population of Slovakia



Source: Eurostat 2018, DATAcube 2018

The basic demographic indicator associated with other indicators that describes the development on the labor market is the population of the country. In our conditions, there was monitored the population development over the period 2000-2020. While in 2000 there were approximately 5.40 million inhabitants in Slovakia, in 2017 the population grew to 5.44 million. By the year 2020 we expect the

population of SR to reach 5.46 million. At the sight of population development in the Slovak Republic, we are monitoring population growth in the period under review. But there was different situation of population development in individual regions of Slovakia. Population growth was noticed in Košice Region and Prešov Region. On the other hand, population decline was identified in Trenčín Region.

Chart 2. Age structure of Slovakia

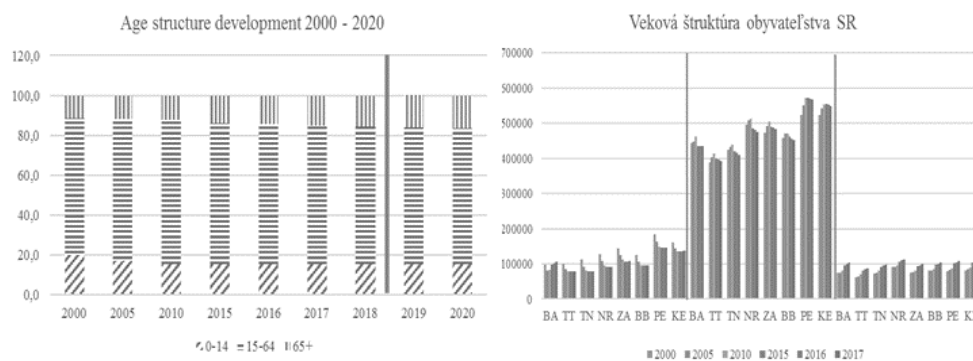


Source: Author's analysis based on data from DATAcube 2018

Chart 2 shows changes in the age structure of the population during the reference period 2000 and 2017. By comparing the years 2000 and 2017, we identify the expansion of the pre-productive but also the post-

productive component of the population. We can say that there has been an increase in population over the period under review.

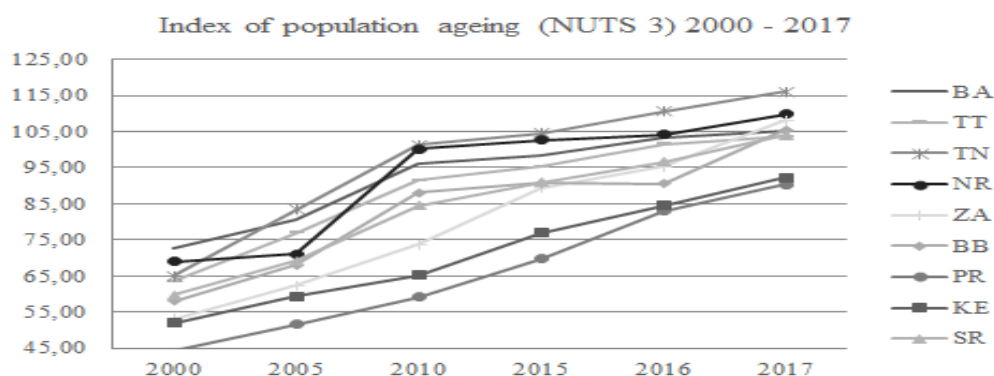
Chart 3. Age structure development of Slovakia



Source: Eurostat 2018, DATAcube 2018

Chart 3 shows the age structure of the population in the Slovak Republic with the forecast until the year 2020 and the age structure of the population at the level of individual regions. The first part of the chart shows the decrease of the productive component of the population by 2020 and on the other hand increase the number of post-productive part of population. In the second part of the chart we identify the situation in

the individual regions of Slovakia. The Prešov Region has the highest share of pre-productive inhabitants from total population and the lowest share has been identified in Trenčín Region. On the contrary, with regard to the post-productive population, the highest share of this population is located in the Trenčín and Nitra regions.

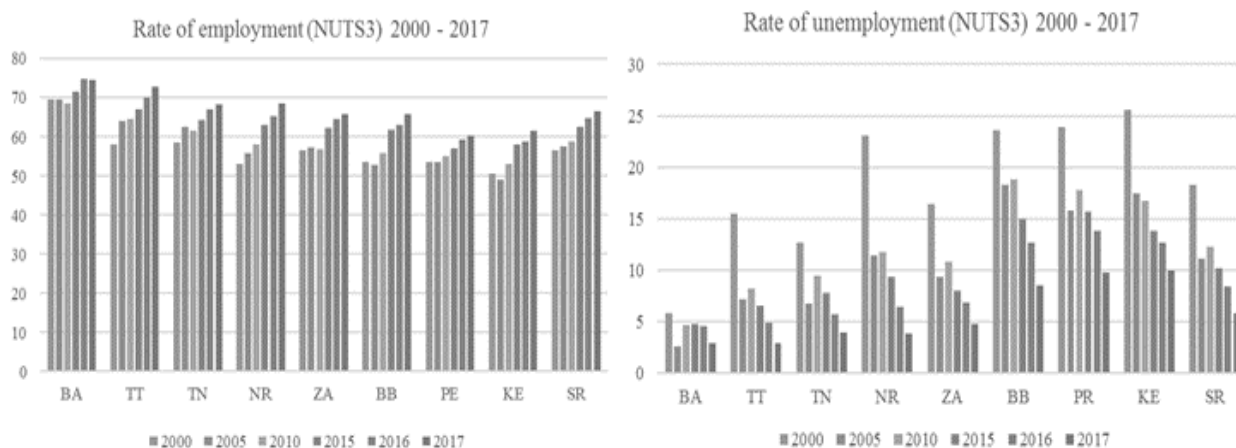
Chart 4. Index of population ageing of Slovakia

Source: Author's analysis based on data from DATAcube 2018

Chart 4 The population aging index points to the current situation of the population age composition in the individual regions in the Slovak Republic. While in 2000 there was less than 100 people in post-reproductive age on 100 people in the pre-productive age, significant changes were observed in 2017. We identify only 2 regions (Prešov Region and Košice Region) where there was less than 100 people in post-productive age on 100 people in pre-productive age.

1.2 Labor market evolution in the Slovak Republic

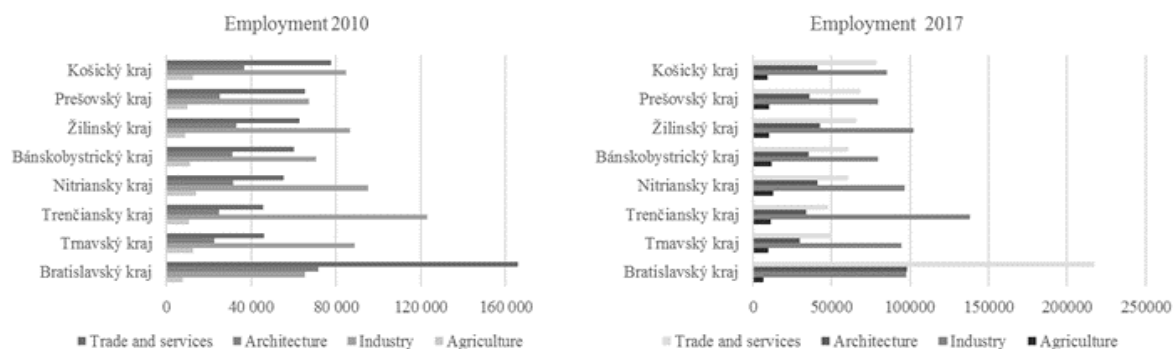
Population aging, as well as many other demographic factors, can be considered as effects that greatly threaten the development of the labor market situation but also the overall condition of the national economy in the country.

Chart 5. Rate of regional employment and unemployment

Source: DATAcube 2018

Chart 5 shows the rate of employment and unemployment in the tracking period 2000-2017. The long-term highest unemployment rate was identified in the Košice, Prešov and Banská Bystrica regions, and contrarily the lowest unemployment rate was noticed in the Bratislava, Trnava and Nitra regions. It

is very positive that the unemployment rate has fallen in each of the regions during the monitored period, which also contributed to decrease of the overall unemployment rate of the SR from more than 15% in 2000 to app. 5,8% in 2017.

Chart 6. Regional employment by sectors of the national economy

Source: DATAcube 2018

Chart 6 interprets the sectoral employment of NUTS 3 regions between 2010 and 2017. We can note that the number of employees in the agricultural sector has decreased gradually throughout the period under review in all regions. When looking at individual regions, it may be noticed that the agricultural sector employs the lowest share of employees, which gradually decreases over the monitored period. The amount of labor in this sector is also dwindling in typically agrarian regions such as the Trnava Region and the Nitra Region. Oppositely, there is a gradual increase in the number of workforce in the trade and services sector. While there is a long-term dominance in the employment of the trade and services sector in the Bratislava Region, the regions of Trnava, Trenčín

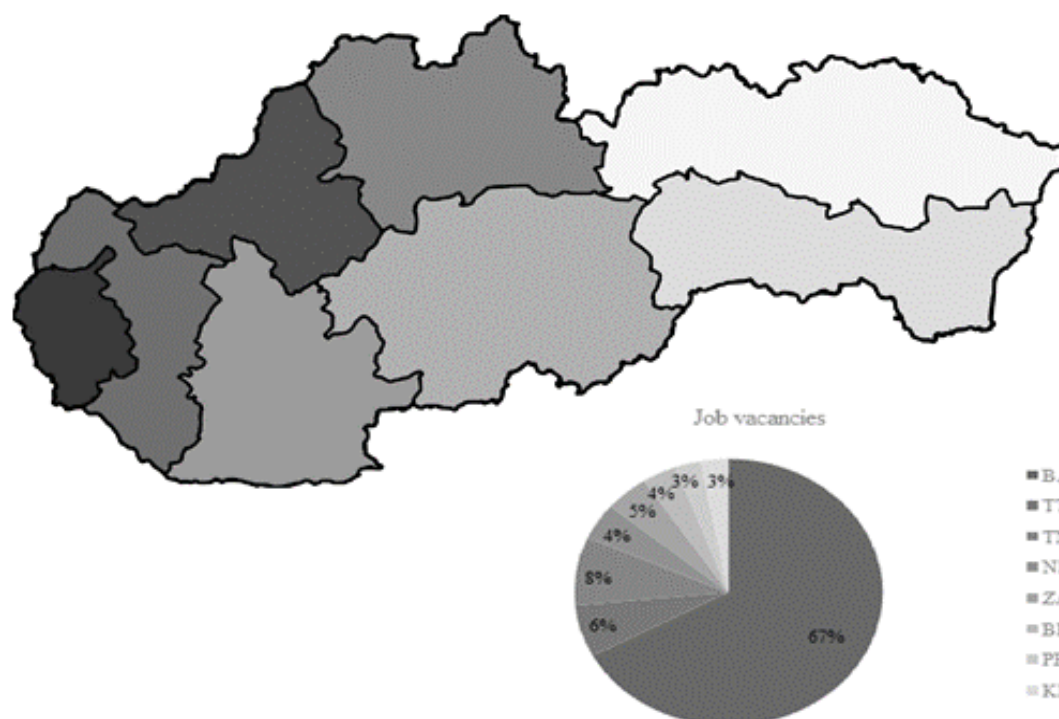
and Žilina dominate the industrial sector, which we can naturally justify from the localization of the automotive industry. On the other hand, the most significant increase in the labor force was recorded in the comparison of regions in the industrial and commercial sector. Despite the dominance of industrial production, there is a slight decrease in the number of industrial workers in typical industrial regions. This workforce is probably going through work in the trade and services sector, as we are seeing an increase in the number of workers in this sector. The architecture sector does not generally predominate in the amount of labor, but it can still be identified as significant in the regions, such as Košice Region, Žilina Region or Nitra Region.

Chart 7. Labor force development of Slovakia

Source: Author's analysis based on data from the Eurostat 2018

Chart 7 shows the number of labor forces in the various sectors of the national economy of the Slovak Republic by 2020. With the exception of agriculture, we expect an increase in the number of labor in all of these sectors. Linking the sectoral employment indicator, which reflects the shift of labor among various sectors of the national economy, with indicators of population growth, including the age

structure, we can assume that in the coming period we will experience labor shortages in the agriculture sector and not only due to the changes in the population age structure and the shift of the labor force the various sectors of the national economy, we can expect a considerable shortage of workers in the industrial and trade sectors and services in the future.

Figure 1. The number of unemployed persons and job vacancies

Source: Author's analysis based on data from the DATAcube 2018

Figure 1 shows the ratio of the number of jobs in relation to the number of unemployed in the individual regions of the Slovak Republic. When comparing data, we identify the increase in the number of jobs in the monitored period, together with a decrease in the number of unemployed in each of the regions of Slovakia. At present, we identify approximately 70,000 vacancies on the labor market, with the most favorable conditions for the unemployed being identified in the Bratislava Region

(62% of the total number of vacancies); on the other hand, the least favorable situation in relation to the number of jobs and the number of unemployed is in Kosice and Prešov Region (3% of the total number of vacancies). Therefore it can be expected that by 2020 the situation will continue to improve due to the increasing number of job opportunities, and already on the basis of previous indicators, we can count on a possible shortage of workers from the council of unemployed who are actively looking for work.

Table 1. Total employment vs. employment 65+

Employment	2000	2005	2010	2015	2020
Total	64,4	64,5	64,6	67,7	70,3
65+	0,27	0,37	0,44	0,78	0,84

Source: Author's analysis based on data from the DATAcube 2018

Table 1 shows the total employment rate in Slovakia, along with the employment rate of the post-productive population, that has decided to remain in employment. As a part of this issue, we decided to bring the 2020 forecast to the linear model. This figure will help us subsequently identify the correlation between these indicators. Looking at the data we obtained, we have identified within the 2000 to 2015 reference period a rapid increase in the

employment rate of the population aged 65+ that has decided to remain in employment. For this reason, it can be assumed that the situation will not change until 2020, and the persistence of the post-productive labor market will become a necessity to provide the necessary amount of labor. It may be expected that the retirement age will be prolonged. It will be necessary to create adequate conditions to keep this workforce active.

Table 2. Regression Analysis

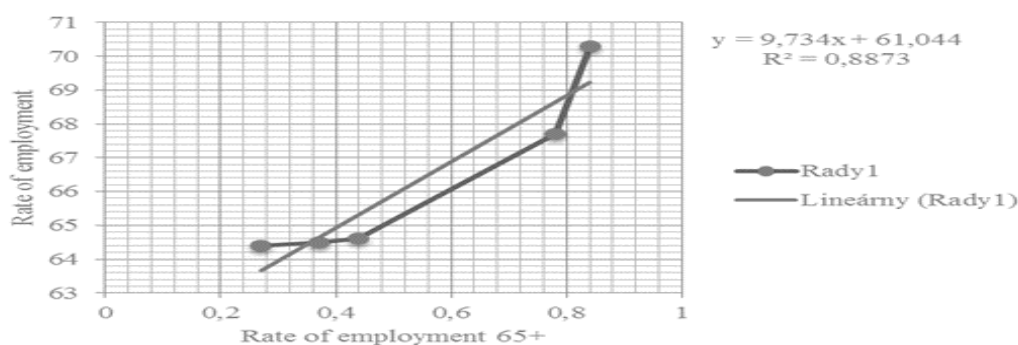
Regression Statistics					
Multiple R	0,941968786				
R Square	0,887305195				
Adjusted R Square	0,84974026				
Standard Error	1,020072891				
Observations	5				

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	24,578354	24,578354	23,62057042	0,016634487
Residual	3	3,1216461	1,0405487		
Total	4	27,7			

Source: Author's analysis based on data from the DATAcube 2018

The regression function is in the form of $y = 61,043 + 9,734 x$ (the independent variable is the population aged 65+ and the dependent variable is the overall employment rate), $b_0 = 61,043$, meaning that in the case of zero participation of the post-productive population in the working process, the total employment rate in the country would reach 61%. X Variable $b_1 = 9.743$ explains that if the number of

workers at the age of 65+ increases by one unit, there will be an increase of 9.73% in the overall employment rate. Correlation coefficient (Multiple R) = 0.94. This value is significantly close to 1, representing very strong correlation of the indicators. The value of the Determination Coefficient (R Square) indicates that the selected regression line explains the variability between the data to 88%.

Chart 8. Regression Analysis

Source: Author's analysis based on data from the DATAcube 2018

Chart 8 summarizes the overall conclusion of the regression analysis. Any increase in the number of post-productive workers on the labor market will also raise the overall employment rate by 94%.

Conclusion

Every employer puts a question about the employment of post-productive workers. While in the past the company has stealthily avoided older employees from restricting young people's employability, today we see post-productive labor processes as a reliable source. The number of companies struggling with the shortage of workers is

steadily rising, qualified graduates are leaving for better working conditions, and that is why job seekers are increasingly responding to fewer and fewer candidates. With regard to the working environment, the conditions and the nature of the labor market, the greatest shortage of the workforce, predominantly in the branches of industry (engineering and automotive), as a sector of our economy, can be expected. When we look at these factors, the starting point for addressing the future labor shortage in the labor market can really be seen in the use of the post-productive component of the population, especially in the soft sectors of industry. Of course, for the employment of this specific population group, it will be necessary to create adequate working conditions, as

well as conditions related to health and social care. The emerging trend of aging population can not be perceived only as a negative demographic phenomenon. By exploiting the potential of the post-productive component of the population available for

work, it is possible not only to increase the economic productivity of the landscape but also to increase the overall economic growth and the level of income achieved.

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HISTORICAL, SOCIOLOGICAL AND JURIDICAL ANALYSIS OF TRAINING OF LOCAL GOVERNMENT EMPLOYEES IN CZECH AND SLOVAK REPUBLIC

Frédéric DELANEUVILLE

Abstract

The Czech Republic and Slovakia are characterised by a special relationship with the training of employees in public sector due to their shared paths in the Czechoslovakia. In Czechoslovakia, which was long under the Soviet yoke, regional and local authorities were perceived as a potential risk to the regime. In this two countries decentralised territorial management models were quickly imported after the fall of the Berlin Wall but during this transition human resource management was neglected. Although legislating in these two countries quickly recognised the principles of local autonomy, aspects relating to the training of local government employees emerged more slowly. Legal frameworks for the training of local government employees are therefore relatively new.

Keys words:

decentralisation, human resources, training, local government employees

JEL Classification: M12, M11, M10

Introduction

In the Czech Republic and Slovakia decentralised territorial management models were quickly imported after the fall of the Berlin Wall. At the time, these two countries were characterised by the absence of a culture of local action, which had wiped out several decades of Soviet communism. It was therefore a matter of breaking away from this authoritarian centralised model, and democratisation seemed to require decentralisation. The importing of these models of governance (Radaelli, 2003) which were not necessarily suited to the socio-political reality of these central European states was accelerated with a view to joining the European Union. Numerous legal powers were granted to the regional and local authorities that were hurriedly set up, without giving the newly-recruited employees – most of whom were from a state administration background – time to be trained. The restitution of political autonomy to villages, which had been under collective authoritarian rule during the normalisation period of 1968 to 1989, led to an increase in the number of municipalities (Klimovský, 2010, p. 251) as well as in the need for *ad hoc* training. These municipalities were granted new powers, without having the means to exercise them. This observation also applies to the regions created latterly. In the 1990s, regionalisation was therefore perceived as a necessary criterion for joining the European Union, and the prospect of obtaining structural funds accelerated this process. Central authorities orchestrated these institutional decentralisations, and legal frameworks that protected

local autonomy were quickly adopted. However, successive reforms have gradually allowed for the implementation of training systems that now have some similarities with those that exist in other European countries.

Literature overview

Many authors analysed the transition of the state in Czechoslovakia after the fall of the Berlin wall. For François Bafail, the collapse of communism in Central and Eastern Europe in 1989 was a far-reaching event. It opened up on the reunification of the European continent and on the consolidation of the sovereignty, long and several times lost, of the new EU member states. The affirmation of their political, economic and social independence has been the basis of post-communist transformation. CEE countries were also exposed to the globalisation movement, an economic phenomena perceived by some either as wealth-being creator or evil for the society (Saxunova, 2015). These processes had an impact of municipalities, as Ludmila Malikova showed that the creation of regional and local self-government including public employees was a real challenge after 1989 but a literature focusing on the evolution of human resources management of the region and municipalities personal is lacking.

Goal and Methodology

In order to correctly present the issue of training of local government employees and local elected representatives in the states examined here, in the first part we will analyse at the sociological and historical context. The vast majority of local government employees were recruited from state administration. These people often retain their centralist-influenced institutional cultures. This could have led *de facto* to a dependence on central authorities. In the second part we analyse the legal framework of the training of local government employees in the Czech Republic and Slovakia. During this transition human resource management was neglected in favour of an overly formalist legal approach that sought to create decentralised structures. We will analyse mechanisms to protect local autonomy adopted in Slovakia and the Czech Republic in the 1990s. The constitutions of these countries explicitly recognised this concept, but initially, they neglected the aspects relating to human resources. Due to a lack of time and adequate financial means, their training has been deficient for a long time. It will be interesting to see if nowadays these two countries have adopted a complete legislative framework for the training of local government employees.

Findings

The reassertion of local autonomy seemed an integral part of the democratisation process in Slovakia and Czech Republic (Swianiewicz, 2002). The prospect of joining the EU and receiving European funding undoubtedly played an accelerating role, but it also helped import models that were little suited to the socio-historical realities of these centralist-suffused countries (Malíková and Delaneuville, 2014, p. 697-702). In this specific context, the training of local government employees was very broadly insufficient. These two countries quickly enacted institutional decentralisation by restoring political autonomy to municipalities, then creating regional and local authorities (Badie, 1992). Local autonomy and its guiding principles, as recognised by the European Charter of 15 October 1985 ratified by these two countries, have legislative and sometimes even constitutional protection, but the hasty implementation of these reforms increased their formal nature (Slaughter, 2002). Slovakia and Czech Republic human resource management was neglected in favour of an overly legal-based approach to the transition. The adoption of formal legal rules for local autonomy by Slovakia and Czech Republic did not trigger an immediate change in practices. The over-representation of legal practitioners in European bodies and their key role during the joining process perhaps goes some way to explaining this negligence.

In the first instance, these two states even often neglected to include a specific legislative framework for the training of local government employees, who would be subject to either the rules of state public service or even the Labour Code (Malíková and Staroňová, 2004). More generally, it should be noted that, in Slovakia and Czech Republic, the specificity of regional and local public service is not clearly apparent in training systems. The lack of precision of the means for implementing training in legal texts, and the absence of any real overall training plans, are other weaknesses in the training systems for local government employees in these two countries. It should also be noted that, although legislation in these two countries has made training for local government employees compulsory and this legal framework is apparently a protective one, the training of local government employees was and still is largely inadequate in these countries where administrations operated according to a centralised, tiered model for several decades. Therefore, in many ways, the training of local government employees does not seem “up to the challenge”.

Discussion

The management and training of human resources are major factors in any process of change. These institutional decentralisations overlooked the importance of managing and training human resources in making local public action operational. Even if, in the Czech Republic and Slovakia, regional and local authorities have a great deal of latitude in training their employees, this freedom may seem appealing from a local autonomy point of view, as it potentially means that systems can be implemented in line with regional and local needs, but in practice the lack of means limits the efficiency of this system. In general terms, the training systems for local government employees do not appear to be in line with requirements in Slovakia and Czech Republic. It might be worthwhile to consider new regulations that would make training more regular, meet the needs of local government employees themselves and contribute to their professional development in line with the concept of lifelong learning. Currently Slovakia and the Czech Republic, apart from initial training, any other training remains irregular and designed more to meet temporary external changes – legal ones in particular – than an employee’s needs in terms of their efficiency, the development of their professional skills or their long-term personal development. Solutions, such as the development of annual training programmes or mechanisms imposing compulsory minimum spending thresholds proportionate to the budgets of regional and local

authorities, could be envisaged. It would also appear beneficial to improve the mechanisms for evaluation and the systems for validating skills acquired through training and thereby it would contribute to the increase of the competencies of the trainees and it also should contribute to the base for a good reward system for the work performed. "Competency based compensation system is one which can satisfy the current scenario of performance linked pay in which employees are paid on the basis of actual performance" (Praveen, Karuppasamy, 2017). This system could be implemented also in building reward system of government employees. Generally, it could be wise to create the equivalent of a senior state public service body for local government employees, as they require a special status and skills that differ from those of state public service employees. Initially, the training of local government employees was very broadly inspired by existing mechanisms in state administration. Regional and local government employees need to have their status consolidated, and this requires specific training linked to the nature of their unique duties in particular.

In Slovakia and the Czech Republic, overall training systems appear inadequate, representing a major challenge that must be met for the developed and lasting autonomy of regional and local authorities. Nevertheless, given this principle, the solutions envisaged must always seek out a balance between recognising the freedom of the representative, capable of identifying their own needs, and the essential nature of training due to the growing complexity of the public matters they are confronted with due to the many decentralising reforms, which make regional and local authorities the principle operators of territorial development. A potential system could be one that includes compulsory basic training in local level complemented by an optional training offer encouraged through incentive systems in order to increase their appeal.

1. Recontextualisation of the training of local government employees in the Czech Republic and Slovakia

It is essential to take the history of Czechoslovakia into consideration in order to understand the specific administrative cultures linked to these special histories (Rupnik, 1999). This provides a better understanding of the contemporary challenges of training of local government employees in these two countries where the very concept of local action, working to a "bottom-up" type model, is relatively recent.

In Czechoslovakia, which was long under the Soviet yoke, regional and local authorities were

perceived as a potential risk to the regime (Kováč, 1998). Hidden behind the egalitarian rhetoric of the regime was the fear of any opposition to the "single-party dictatorship" (Bafail, 2006, p. 17). The communist hegemony was characterised by a very hierarchical organisation and the domination of the centre over the periphery. The capital cities home to the centres of power attempted to erase any regional specificity. Any hint of initiative was condemned. The so-called "normalisation" period followed on from the abortive attempt in to ease the grip of the regime through the implementation of a "socialism with a human face" in 1968, which was violently suppressed. It was not until the fall of the Berlin Wall that a genuine democracy was established. Authoritarian centralisation is part of the institutional history of the Czech Republic and Slovakia and allows us to understand the often-complex relationships between the capital cities and the peripheral regions.

In the 1990s, the reassertion of local autonomy seemed an integral part of the democratisation process. It had a very strong symbolic significance, which may explain the speed – or haste – with which the reforms took place. The gradual development of training of local government employees in the Czech Republic and Slovakia only met the challenges of increasing the professionalism of employees in regional and local authorities, but was also part of a broader process relating to the democratisation of the entire political system after the fall of the authoritarian, centralised system of the socialist state (Malíková, 1995). The democratisation of society was therefore impossible without the re-establishment of free regional and local structures stemming from regional and local authorities made up of inhabitants who were free to manage their futures and their local areas.

In Czechoslovakia, the rapid transfer of jurisdiction to municipalities and staff who are insufficiently prepared has led to many shortcomings. For example, in the context of a local democracy in its infancy, delegating the management of land planning has led to inconsistencies in the urban development of certain towns and cities. On occasion, it has even led to wrongdoing. In Slovakia, for example, the power to issue building permits has allowed for personal gain to the detriment of general interest, as is sometimes illustrated by the unbridled development of some constructions in areas that are over-populated and affected by pollution or by parking problems. In the absence of genuine control by a then-nascent local democracy, transferring certain powers to the municipalities turned out to be a risky gamble. In the former Czechoslovakia, where communism had at times led even the most audacious citizens to resign themselves to accepting the unacceptable, some

distrusted collective actions during this period, favouring more individual strategies. For example, the restructuring of human resources in public service has occasionally been rather opaque. It has only rarely provoked collective opposition, as this was not in the culture of these countries and would have been unlikely to succeed. The employees who lost out from this system were more willing to mobilise their networks individually in order to obtain a position in another department rather than collectively oppose the arbitrary or unjust nature of a reform. The loss of trust in the concept of general interest, which was distorted by the communist regime, and the absence of any culture of collective opposition have left a considerable degree of latitude for individual and partisan approaches. These have sometimes prevailed over local or regional interest, which were still rather vague notions.

Despite a desire for change, proponents of reform the Czech Republic and Slovakia countries have come up against institutional inertia. Sociologists have shown that the members of an organisation will not immediately become invested in a process when the expected outcomes are unknown, preferring instead to perpetuate traditional practices whose mechanisms they understand. Although the desire for change that existed after the fall of the Wall represented a window of opportunity and allowed for a full restructuring of constitutional and legislative frameworks, administrative practices have been subject to a degree of historical continuity (Delaneuville, 2015, p. 445-454). Changes to regional and local structure and the establishment of new institutions do not automatically trigger such a radical change in the mentality of employees, a much lengthier process. This is principally the case with local civil servants, who were trained under the authoritarian state regime and whose consequent behaviour has not instantly adjusted to changes in the institutional framework. Under the popular democratic system, the citizen was not a subject but rather an object in his or her relations with the state administration, and was obliged to passively accept the often arbitrary decisions of the nomenclature. The civil servant was always in command of the situation. This resulted in a flagrant imbalance between the civil servant and the "user". Changes to the rulebook after 1989 demanded a change in practices, not only from civil servants accustomed to their supremacy, but also from citizens, who often had an insufficient awareness of their rights. It took several years for citizens to gain recognition, and since this process is not yet complete, the issue of the central position of the user is far from resolved.

In the early years following the creation of regional and local authorities in the Czech Republic and

Slovakia, these structures were run alongside state structures in a system in which the distribution of powers remained vague for several years: *"In Slovakia, the distribution of powers between state structures and regional and the newly-established local authorities were very unclear in the period prior to joining the EU. Lines were blurred, but there was hope that the situation would be clarified in the future"* (Jacko and Malíková, 2013, p. 124-137). This was the case also in the Czech Republic and the upheaval created by the many reforms with a view to joining created real instability.

Staff recruited to work in regional and local authorities were, by definition, mainly ex-state civil servants who unknowingly brought their centralist-influenced administrative cultures with them. "Sometimes, the administrative staff did not even have to move offices, and the new sign on the building in which they worked did nothing to immediately dispel their working habits (interview with Štefan BIELAK, mayor of Spišská Belá, conducted on 12.12.2010).

In a system in which power continued to be exercised in a very hierarchical way, no value was accorded to personal initiatives. For that matter, the reorganisation of territorial management was seen as a threat by employees, who suspected a drastic reduction in staffing (Malíková and Vavrová, 2011).

The implementation of a new institutional framework did not enable these states to completely shed the cultural vestiges of the communist regime. Local government employees of the newly-established regional and local authorities lacked any genuine culture of local action, putting them in an inferior, delayed position compared to central power.

In a system where, for several decades, the development of professional careers favoured hierarchical allegiance over skill, the recruitment of regional and local government employees could not immediately be conducted on a purely meritocratic basis. Unlike the private sector, where the law of the market has been able to punish inefficiency and push for rapid improvement in management and working methods, practices have developed more slowly in the public sector. This inertia has been exacerbated by the lack of means that could have provided for proper training of all public employees. In the Slovak economy, the public sector employees are mostly women and men dominate the private sector (Kottulová and Mitková, 2016, p. 10).

It is essential that this institutional heritage be taken into consideration in understanding the importance of the contemporary issues of training of local government employees in Czech Republic and Slovakia. Nevertheless, the change recorded over the past few decades is significant. The standardisation of

procedures, the adoption of ISO standards, the development of resources, the increased professionalism of civil servants, and the development of skills and expertise demanded by the complexity of the problems to be dealt with, especially in the context of conducting projects co-funded by the European Union, have allowed local government employees to take on responsibilities regarding the development and future of their regional and local authorities.

2. The legal framework of the training of local government employees in Czech Republic and Slovakia

There were no decentralised regional and local authorities under the communist regime in the Czechoslovakia. As such, the question of the status of local government employees was never raised, as the regime rejected the existence of free regional and

local authorities on principle. Legal frameworks for the training of local government employees are therefore relatively new. Although legislating in these two countries quickly recognised the principles of local autonomy, aspects relating to the training of local government employees emerged more slowly. However, article 6 of the European Charter of Local Self-Government, ratified by these two countries, provides that *“the conditions of service of local government employees shall be such as to permit the recruitment of high-quality staff on the basis of merit and competence; to this end adequate training opportunities, remuneration and career prospects shall be provided.”*

The legal frameworks implemented for the training of local elected representatives is different in Slovakia and Czech Republic, but it should be noted that the training of local government employees is now compulsory in these two countries.

Table 1. Law rendering the training of local government employees compulsory

	Law rendering the training of local government employees compulsory
Czech Republic	Law n°312/2002 of 1 January 2003
Slovakia	Employment law n° 311/2011

In Slovakia and Czech Republic legal mechanisms to protect local autonomy were adopted in the 1990s. The constitutions of these countries explicitly recognised this concept, but initially, as they neglected the aspects relating to human resources.

In Slovakia, the training of local government employees was not regulated until Employment law n°311/2001 of 2 July 2011. This law, which is very general in its scope as it applies to all public and private sector employees, features specific rules for local government employees. There is no standardised initial training system for local government employees in Slovakia. As with all employees, local government employees are subject to the Labour code, specifically law n°311 of 2001. Paragraph 47 of this law specifies the *“obligations incumbent on the employer”*:

“By recruiting an employee, the employer is obliged to acquaint them with:

- the work rules,*
- the collective agreement,*
- the legal regulations relating to work performed by him/her,*
- the legal regulations and other regulations ensuring occupational safety and health,*

- the provisions on the principle of equal treatment.”

As such, there is no specific law making initial training of local government employees compulsory, unlike state civil servants who must receive training in line with the law on public service n°400 of 2009. New proposals, which would likely change the entire education system and also introduce compulsory initial training of local government employees, have been being drafted for several years now.

On the other hand, local government employees exercising powers conferred by the state to regional and local authorities are obliged to complete the training provided by the ministries that organise specific training relating to the exercised powers. For local government employees exercising only the “specific” powers of the local authority, this authority is responsible for providing training pursuant to paragraph 47 of the aforementioned Labour code. These local government employees also have the option to undergo the training offered by Regional Training Centres (RTC). In practice, local government employees are trained in these specialised centres in 90% of cases.

In Slovakia, the law n° 311 of 2001, which is very general in scope as it applies to all workers, therefore relates to local government employees, including in terms of continuous training. Paragraph 153 of this law provides that: *“The employer must contribute to the further qualification of their employees or its increase. The employer shall negotiate with the employee representatives measures aimed at improving their qualification, their further progress and their development”*.

Article 54 of this law provides that *“the employee is obliged to systematically improving their qualifications for performing the tasks included in their employment contract.”* As such, the employer has the right to oblige the employee to take part in continuous training. During this training, employees receive their usual salaries. Under law n°311/2001 of 2 July 2001 which applies to all civil servants, territorial public service employees, like their colleagues in state public service, are entitled to five training days per year.

In the Czech Republic, law n°312/2002, which entered into force on 1 January 2003, acts as a framework for the training of local government employees but only applies to administrative officers in local authorities (*“úředníci”* in Czech). The training of other local government employees is covered by the more general provisions of the Labour code. Czech legislation also makes an important distinction between specialised and non-specialised regional and local authority officers. All regional and local authority officers must undergo initial “basic” training, which is compulsory but does not end with any accreditation of the skills acquired, Interior Ministry regulation n°512/2002 features a list of specialised regional and local authority officers who must sit an examination certifying their specific skills (*“zvláštní odborná způsobilost”* in Czech) within eighteen months from when they take up their post. Preparation for this examination is not legally required, but it is nevertheless highly recommended. In fact, it is an integral part of the initial training for

“specialised” officers. The local authority will only continue to pay the local government employee during this preparation if it is undertaken at the Institute for Public Administration in Prague or another accredited organisation. The local government employee can also take a week of unpaid leave to prepare for the examination.

Conclusion

The success of decentralisation in Slovakia and the Czech Republic will require the modernisation and valuing of its essential servants and promotes local government employees. Economic theory states that work is the human activity performed by the person for the reward, however, the values created by the work have economic, cultural and moral character (Novackova et al, 2015). The strengthening of skill-recognition systems enabling genuine, merit-based career development would help combat cronyism and nepotism, culturally accepted all-too-regularly accepted on a local level, and make regional and local public service more attractive. Currently, qualified young people generally prefer to work in the private sector, where the skills they have acquired are more highly valued and their career development prospects are less uncertain. It is the low salary level in particular that explains the public sector’s lack of appeal. All too often, institutional legacy forces young employees to conform to outdated operating methods. New recruits to regional and local authorities are often unknowingly joining a cultural legacy of subordination by the regional or local authority to central state. Finally, local government employees in Slovakia and the Czech Republic are the “victims” of several decades of administrative centralism in Central Europe. The training of local public officials is a challenge facing these two countries, with their numerous municipalities and lack of human resources with the adequate training to best implement their potentially vast powers.

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THE EFFECT OF THE EXISTENCE OF CLUSTERS TO REDUCE REGIONAL DISPARITIES IN THE SLOVAK REPUBLIC

Dana JAŠKOVÁ

Abstract

Regional differences in Slovakia, as well as in other EU countries, are becoming more and more observable. These economic, social and environmental differences show different forms. Different indicators are used to quantify these differences. The article deals with the issue of interregional differences and their measurement in the Slovak Republic at the level of NUTS 3 regions, using a composite indicator. The aim is to assess the level of regional disparities in relation to the existence of clusters in regional development. The basic sense of regional development is to sustainably improve the quality of life in the region. Achieving this basic goal requires a comprehensive approach to assessing regional differences. From the results of the analysis of the assessment of the reduction of regional disparities, it is not possible to state a statistically significant decrease in regional differences. A certain tendency was observable, but still there are still large regional differences in Slovakia, as in the economic, social and environmental spheres.

Key words

Regional disparities. Composite indicator, cluster, beta-convergence

JEL Classification: C34, C52, R23

Introduction

The economic development of the Slovak Republic is largely determined by the performance of the regions and the policy of making use of their potential. For effective regional policy is needed for the identification of the relevant factors of development. The active factor is human resources, passive research, development and innovation are, basic infrastructure and services. In addition to the main factors for the development of a region important to analyze economic performance indicators — GDP growth, employment, productivity, and evaluate their impact on regional development and growth. The influence of various factors and depending on the playing field, the development in different regions. It is considered the economic and overall social problem. He disrupts the development in the field of economic, social and environmental. The aim of regional policy is to reduce these differences. Reduction of disparities is also one of the primary goals of the regional policy of the European Union (EU).

With the improvement of the socio-economic level of the EU Member States related to the development of the various regions. Achieving this objective is conditional on the level of economic and social development of the Member States. He is, however, between countries at different levels and is determined by the overall situation and the developments in different regions of the Member States. The region is

seen as a key element in the EU and at the same time an indicator of economic development. At the same time is considered a political, economic, social and cultural unit (Krajňáková, E., Vojtovič, S., 2012).

Activities aimed at improving the welfare and performance of the regions are referred to as regional policy. Regional policy can be defined as a set of objectives, measures and decisions in government activities at the regional level. A priority of the regional policy is to ensure the development of the regions and major differences in their development. Great emphasis is placed on efficient use of own resources of the region. On the overall economic development of the country, affects different socio-economic level of the region. Varying degrees of development of the regions stems from non-equipment production factors. Regions differ and the high rate of unemployment (Habánik, 2014).

Regional development is defined as a set of economic, cultural and environmental processes and relationships. These relations are taking place in the region and contribute to increasing their competitiveness, economic, social and territorial development. The first economic models, which include the factor of regional development are enhanced versions of the theory of economic growth. These models predict that free international trade stimulates economic growth and lead to the convergence of the economies of the regions investigate each other (Dawkins, 2003).

The reason for the implementation of regional policy are different levels of social and economic development between the various regions. These inequalities in the literature referred to as regional disparities. To the understanding of the specific concept of regional disparities (RD) can be accessed from different points of view. According to Kutscherauer (2010) is the diversity of characters, events, or inequality or RD processes having a clear territorial location (can be allocated in the defined territorial structure) and occurring at least in the two entities of the territorial structure. In European terms, RD are a measure of the level of economic, social and environmental cohesion European territory, which leads to their breakdown into three basic categories, and thus to define the economic, social and environmental disparities (Melecký, Staníčková, 2015). In the terminology dictionary (Navrátil et al., 2012) are RD defined as the difference or inequality between regions. The main causes are related to the uneven development of the region, by the terms of the action of market forces, the decline in some sectors. Furthermore, it is an uneven development of private enterprise, with varying degrees of facilities, technical infrastructure with low mobility, where appropriate, the territory of the inter-regional labor.

Other approaches in relation to the economic performance of the region explain RD and the standard of living of the population. RD does the differences between economic performance and the well-being of individual regions, or as indicators that indicate the degree of variability in some of the economic phenomenon in the regions of the country. An RD can be regarded as a phenomenon of regional development. Interested in regional policy is growing, even from the perspective of the social sciences. It is, therefore, that spatial disparities and inequalities in the territorial units are still tend to accretion. That happens in the Slovak Republic, but also in the framework of the EU and to overreach the undesirable polarizations and manifests itself in a significant way the space was the social nature of regional disparities (Švecová, Rajčáková, 2014).

One of the options for improving the socio-economic level of the region is to support the development of certain sectors of the prevailing in the region. Their diversification from one region to another creates a unique environment where companies face a similar focus. These businesses are trying to exploit the comparative advantages of the region. So he creates a network of a wide range of businesses and organizations linked to specific links, i.e. clusters. The term cluster is closely related to the theory and practice of regional development. This concept is not new in the regional economy. According to Porter (2000) the clusters represent a

certain geographic concentrations of interconnected companies, specialized suppliers, service providers, businesses in related industries and institutions (universities, trade unions) in a certain area (sector), which both compete but also cooperate with each other. It is now considered as an important element of the concept of cluster development.

Clusters play a major role in the development of the various regions by contributing to the enhancement of their competitiveness. Their importance in regional development is based in particular on: improving the division of labor, increasing migration of workers between enterprises, the cooperation of the undertakings within the framework of the Department, the growth in the number of jobs, higher wages, and higher rate of patenting, creation of new types of businesses, their growth and survival (Navickas, Vojtovic, Svazas, 2016).

The basic aim of the paper is to evaluate the use of selected indicators of regional disparities in the Slovak Republic with a focus on the importance of clusters in regional development.

1. Assessment of regional disparities (material and methods)

The primary condition for balancing regional disparities is to quantify their level of. An analysis of regional disparities is subject to obtaining the relevant data. This requires sufficient knowledge and guidance in a wide range of published methods and ways of their implementation. In general one can speak of a threefold assessment choice of units, the selection of appropriate indicators of the RD: observational and selection of the appropriate method. When choosing the observational units we only have statistical data that are available only in defined statistical territorial units at NUTS 3.

The selection of the indicators used to identify and measure the RD is an important task for their investigation. The correct selection of the indicators depends on many factors, from the definition of the RD and the objective pursued, which is to track the analysis. It further depends on the territorial scale, the power indicator lights and their evaluation. There are simple and composite (aggregated, integrated) indicators (Michálek, 2014).

Composite indicators represent a higher degree of identification of a suitable range of indicators based on links RD. Are based on an appropriate number of indicators link. Their basic attribute is sufficient comparative ability, mathematical manageability and readability of the information. Their method of aggregation is based on the use of multiple methods.

1.1 The Design of CI

In assessing the need for an integrated perspective on the issue arises logically RD. This is related to the construction of a composite indicator (CI). Currently, there are several ways to calculate. One of the most advanced approaches to the design of the so-called 'Benefit of the doubt' composite indicator (Rogge, 2017; Cherchye et al., 2006). Its construction is using DEA models (Verschelde, Rogge, 2012). The Organisation for economic cooperation and development (OECD) has published a detailed procedure in the year 2008 methodology and its construction. The composite indicator is a higher level of identification and interpretation of RD. The document describes the major advantages and disadvantages of the use of such summary indicators in practice (Handbook on Constructing Composite Indicators, 2008).

Construction of the composite indicator CI can be described in the following steps (in parentheses are given can use mathematical methods):

- the creation of the theoretical framework, the choice and combination of individual assessment of their relevance and statistical sub-indicators, material properties (DEA method, resolution on indicators type of max, min, the method of calculation of missing values, comparative analysis, PCA analysis),
- normalization and aggregation of the original indicators, indicators of weights (scoring method, the standard variable, method, the distance from the fictional object),
- testing the properties of the designed CI (sensitivity analysis),
- visualization of results.

The values of the indicators were standardized method for min-max. For the calculation of the composite indicator for each of the regions it has been used additive aggregate method:

$$CI_r = \frac{\sum_{i=1}^n I_{i,r} w_i}{\sum_{r=1}^m \sum_{i=1}^n I_{i,r} w_i},$$

where $I_{i,r}$ is the value of standard indicator $i = 1, 2, \dots, n$, for the region $r = 1, 2, \dots, m$ and w_i is its weight.

1.2 Evaluation method of regional convergence

To remain scattered regions with a composite indicator, you can use the methods of real convergence. It is used a number of concepts: beta (β) convergence (absolute, conditional), sigma (σ) and Markov chains. Sigma convergence tests measure whether the variance in the regional distribution of the indicator decreased. Beta convergence tests shall examine whether regions with low levels of indicator experienced stronger growth than regions with a high level of the indicator (Janssen, Hende, De Beer, Van Wissen, 2016).

According to the beta convergence method, less developed regions are growing faster than more developed regions. The subject of research is the only condition for the beginning and end of the period under review. This can be a disadvantage, because the information on developments remain unused. Examines the use of the linear regression equation. Of the estimated value β of the directive of this line is: if $\beta < 0$ is trend of convergence, if $\beta > 0$ is trend of divergence, if $\beta \cong 0$ not none of the tendencies. The coefficient of determination R^2 indicates an estimated reliability of a linear trend. If the value of the coefficient of determination, close to 100%, it is considered a tendency (convergence) as a major. The recommended minimum value is 80%. Otherwise, it is considered to be insignificant (Minařík et al., 2013).

2. Results and discussion

The Slovak Republic is made up of eight self-governing regions. These are the regions of Bratislava, Trnava, Nitra, Trenčín, Žilina, Banská Bystrica, Prešov and Košice. In these regions it operates a total of 25 active cluster. The structure of the regional citizenship of the clusters are listed in the following table.

Table 1. Number of clusters in the regions

region	Bratislava	Trnava	Nitra	Trenčín	Žilina	Banská Bystrica	Prešov	Košice
Počet klastrov r. 2010	0	3	2	0	3	2	1	1
Počet klastrov r. 2018	3	4	2	3	4	2	2	5

Source: own processing by SIEA

Most of the clusters in the SR operates in Košice region, at least in the Trenčín region. For the assessment of the impact of the existence of the cluster in the region on reducing regional disparities were analyzed for some indicators. In view of the official availability of NUTS 3 regions were selected for the following 15 indicators (x_i , $i=1,2,\dots,15$) in three of the areas surveyed:

Economic sphere: x_1 - Regional GDP per capita (€), x_2 - Gross value added (mil. €), x_3 - Rate of economic activity (%), x_4 - Unemployment rate (%), x_5 - Employment rate for 15-64 years (%).

Social sphere: x_6 - Incapacity (%), x_7 - Number of beds in health institutions (‰), x_8 - Mean equalized gross household income (€/mouth), x_9 - Number of social welfare facilities (‰), x_{10} - Number of detected crimes (‰).

Environmental sphere: x_{11} - Population density, x_{12} - Solid emissions to km², x_{13} - Share of the waste being recovered (%), x_{14} - Density of motorways and express roads, x_{15} - Share of the population connected to sewerage system with STP (%).

Comparison of the regions from the point of view of selected indicators for the period 2010 and 2016. The year 2010 is the highest increase in clusters in the Slovak Republic. Since some of the key indicators (e.g. regional GDP) for the year 2017 are not officially published, we've compared the year 2016.

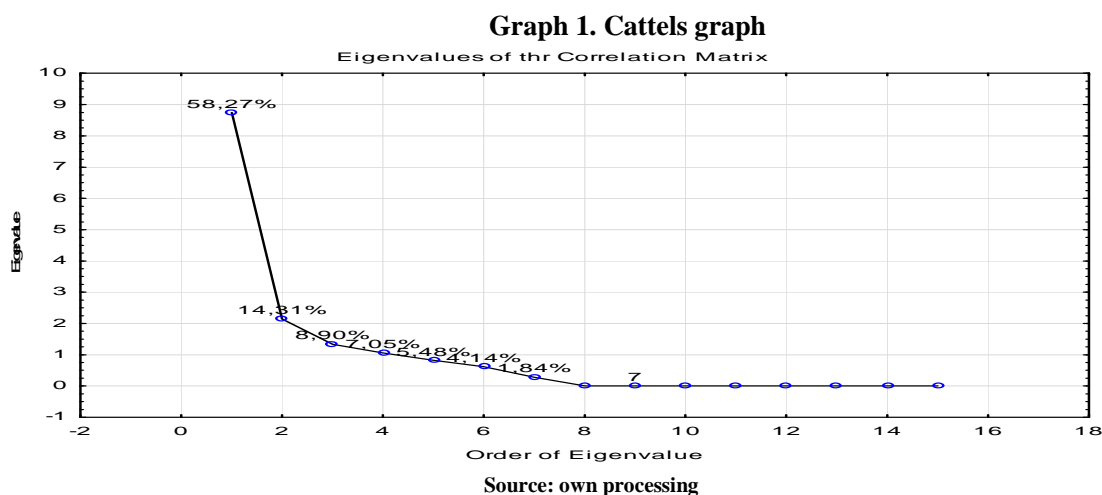
Some of the indicators for comparability were converted to km² or per capita.

2.1 Assessment of suitability of selected indicators

Each indicator is included in the analysis was assessed by using exploratory analysis. Descriptive statistics were calculated for this purpose (location, variability and symmetry, the correlation matrix). In the case of a significant correlation was assessed using the VIF factor multikollinearity. Graphical methods are identified the extreme values, data independence, homogeneity). Because the data has not been identified, no statistical anomaly, to further analysis included all 15 indicators.

2.2 Weights of indicators

The starting point to determine the weights of the individual indicators was to analyze the main components (Principal Components Analysis – PCA) that have been identified key indicators and transformed the latent variables. Statistically significant were the first three components which together explain 81.48% of the total dispersion of the selected indicators. After these three variables occurs in the Cattels chart, as shown in Graph 1.



With the highest values of correlation coefficients and the variability explained components were

calculated weights w_i for each of the indicators (Table 2).

Table 2. Weights of indicators

i	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	x_9	x_{10}	x_{11}	x_{12}	x_{13}	x_{14}	x_{15}
w_i	0,19	0,12	0,15	0,09	0,12	0,05	0,04	0,01	0,09	0,02	0,00	0,04	0,05	0,01	0,01

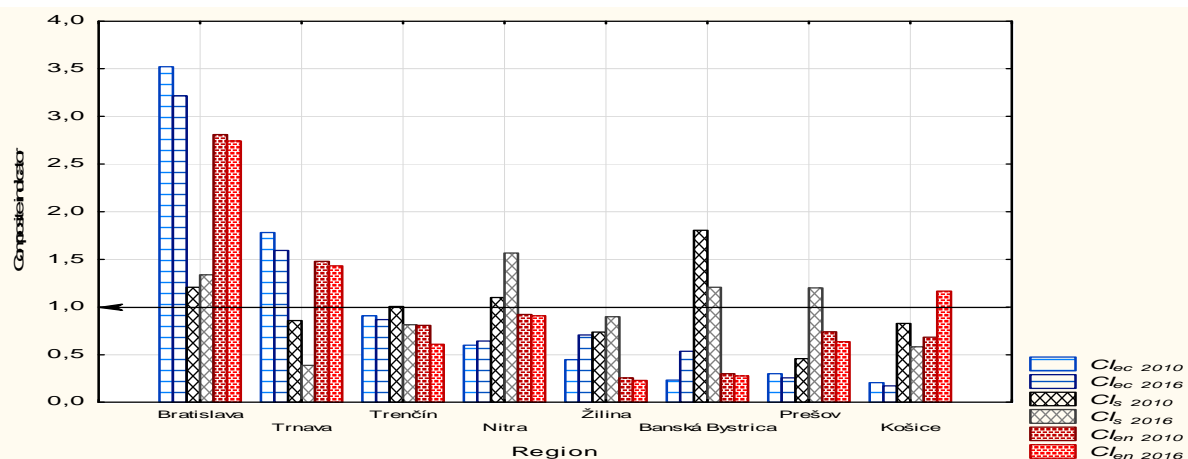
Source: own processing

2.3 The Calculation of the CI

According to the relationships above, sub-indices were calculated per sphere. Sub-indicator for the economic sphere is marked CI_{ec} , for the social CI_s and for the environmental CI_{en} . In the case where the value of calculated indicator $CI \cong 1$, studied region

can be regarded as within the average. If the value is greater than 1, then it is above average and, otherwise, below average. The column graph (Graph 2) shows the calculated values of composite sub-indicators per sphere. For each region is displayed in three columns and six spheres are always next to each other compared the years 2010 and 2016.

Graph 2. Regional subindicators CI in bar graph



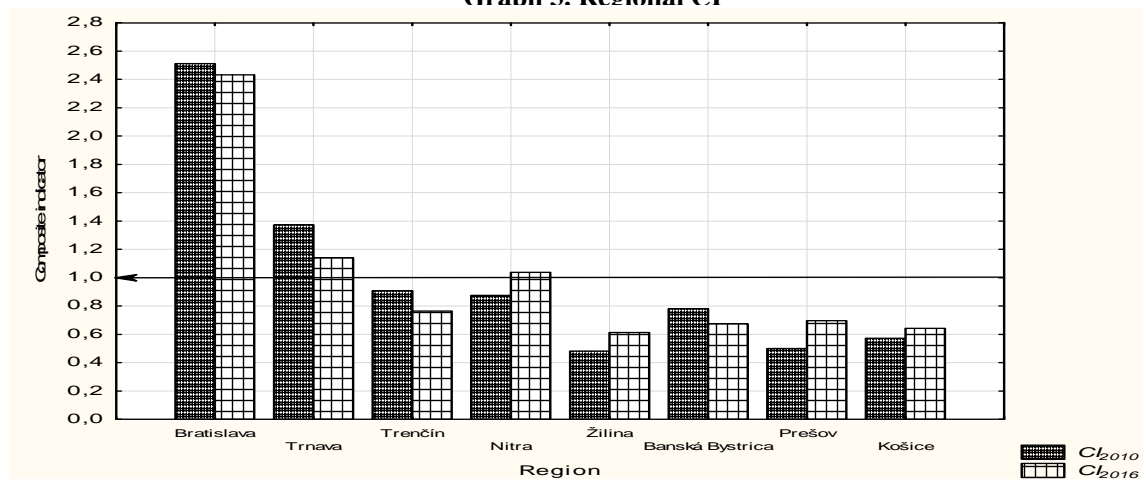
Source: own processing

From the graph it is clear that the best results in the economic sphere reaches the region Bratislava. In the year 2010, the value of $CI_{ec\ 2010} = 3,52$, which is above average. A value greater than 1 has only reached the region of Trnava. The Trenčín region was just below the average, $CI_{ec\ 2010} = 0,91$. The weakest in the economic area in 2010 was the region Košice, the value of the composite sub-indicator $CI_{ec\ 2010} = 0,21$. In 2016, in most regions, value of $CI_{ec\ 2016}$ dropped, however, a significant increase is observed in the region of Žilina and Banská Bystrica. The region of Bratislava is well above average in the social field. Since 2010, the situation improved even.

The increase was recorded in the regions of Nitra, Žilina and B. Bystrica. The best value of the monitored sub-indicator is recorded in region Nitra in 2016, $CI_{ec\ 2016} = 1,57$. In the environmental sphere is once again the best region of Bratislava. The region of Trenčín also has the value of this sub-indicator overriding. In 2010, the Košice region fell from a deep sub-premium in the period under review to an average to above average.

Subsequently, the total aggregated indicator was constructed from the calculated values of the sub-indicators for each sphere. The chart shows regions with CI above and below CI .

Graph 3. Regional CI



Source: own processing

Region of Bratislava is in the comparison of high-above average. Even though it was a slight decrease over the period considered. Also in the Trnava region, which is still above the average. Above average, the Nitra region was also reached in 2016. The decline has occurred in the region of Trenčín and Banská Bystrica. A slight increase in Žilina, Prešov and Košice. All calculated values of each sub-indicator for each region are in the following table. There are also referred to the aggregate value of the composite indicator for the year 2010 and for the year 2016.

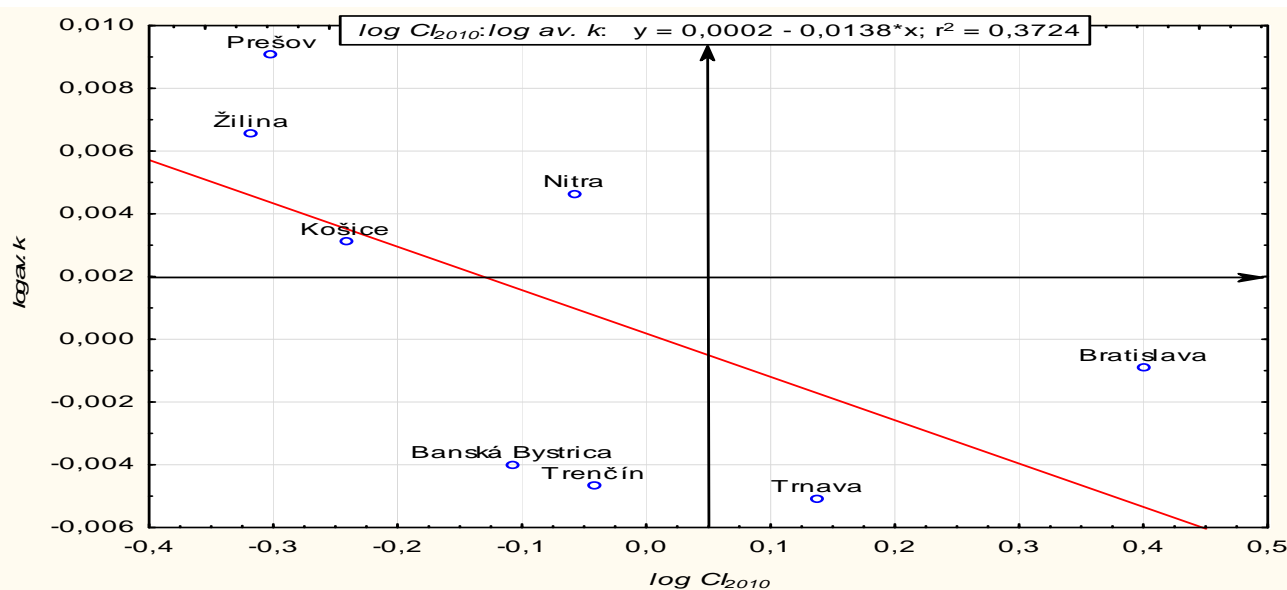
Table 3. Aggregated indicators CI

Region	Sub-indicators						Aggregated Indicator	
	2010	2016	2010	2016	2010	2016	CI ₂₀₁₀	CI ₂₀₁₆
	CI _{ec}	CI _{ec}	CI _s	CI _s	CI _{en}	CI _{en}		
Bratislava	3,52	3,22	1,21	1,34	2,81	2,74	2,51	2,43
Trnava	1,78	1,59	0,86	0,39	1,48	1,43	1,37	1,14
Nitra	0,91	0,87	1,01	0,82	0,81	0,61	0,91	0,76
Trenčín	0,60	0,64	1,10	1,57	0,92	0,91	0,87	1,04
Žilina	0,45	0,71	0,74	0,90	0,26	0,23	0,48	0,61
B. Bystrica	0,23	0,54	1,81	1,21	0,30	0,28	0,78	0,67
Prešov	0,30	0,26	0,46	1,20	0,74	0,64	0,50	0,70
Košice	0,21	0,17	0,83	0,58	0,68	1,17	0,57	0,64

Source: own processing

The development of regional disparities in the analyzed regions was monitored by the β -convergence method. The graph shows the decreasing trend in the regression line, with a coefficient of determination $R^2 = 0,37$, while the speed of convergence is 0,0138. Conclusion of the β -convergence measurement is thus that convergence prevailed in the set of eight regions over the period of time, since the regression line directive is negative. Given that the calculated value of the determination coefficient does not exceed 80%, there can be no sign of a significant tendency towards convergence.

Graph 4. Beta convergence



Source: own processing

It can be seen from the correlation chart that the Prešov, Žilina, Košice and Nitra regions are located in the second quadrant. Here are the regions with the under-deduction value and the highest increase over the reference period. Concerning the existence of clusters in these regions, it can be said that the emergence of new clusters is likely to have an effect on the increase in the overall level of these regions. In the third quadrant, the regions of Banská Bystrica and Trenčín. So, regions with under-valued value CI_{2010} and at the same time the slowest growth. In Banská Bystrica there was no cluster initiative for the period under review. In the fourth quadrant are the regions of Bratislava and Nitra. Here the initial value of the monitored composite indicator is excessive, but the growth is sub-average. In the period under review, three clusters were established in Bratislava and one in Trnava.

Conclusion

The basic sense of regional development is to sustainably improve the quality of life in the region. Achieving this basic goal requires a comprehensive approach to assessing regional differences. One approach is to measure and compare the level of regional development or quality of life in the region. The contribution is a composite indicator to compare the social, economic and environmental level of the regions of Slovakia. The base has been elected the year 2010. 15 indicators were analyzed. Using the results of the PCA analysis, they were assigned to

individual weights. Using these, three sub-indices were calculated for each region. For the economic, social and environmental spheres. Using these values, the regions were compared to each other.

An aggregated composite indicator was constructed from the calculated sub-indicators CI . It is clear from the results that the best value for the CI is in the long run the Bratislava region, although its value is decreasing over the 10 years monitored. CI has increased in regions Nitra, Žilina, Prešov and Košice. In these regions, there are currently an average of five clusters per region. The Trenčín region has a long-term under-level. Only three functioning clusters are currently registered in this region. In this context it can be stated that the emergence of new clusters could raise the level of the region.

From the results of the analysis of the assessment of the reduction of regional disparities, it is not possible to state a statistically significant decrease in regional differences. A certain tendency was observable, but still there are still large regional differences in Slovakia, as in the economic, social and environmental spheres.

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FATIGUE AS A CONSEQUENCE OF SHIFT WORK AND EXHAUSTION

Eva ŽIVČICOVÁ

Abstract

Shift work with rotating night shifts negatively impacts human rhythms and might increase probability of developing multiple diseases. This form of working schedule can contribute to obesity, diabetes, and development of cardiovascular diseases, sleep deprivation and insomnia. Common secondary effect is fatigue and its various forms. This article offers a quantitative study comparing the level of fatigue among shift and fixed schedule working conditions. The degree of fatigue is classified in the scope of chosen characteristics: frequency, intensity, symptoms and it's daily occurrence. The sample is composed of 57 workers participating in shift work and 57 having a fixed working schedule. Subjective interpretation was applied on analysing the questionnaires for identification of the degree of fatigue coefficient. The research findings are in accordance with previous studies and confirm shift work as a risk factor for physiological wellbeing of employees.

Key words

Shift work, fatigue, degree of fatigue, fatigue symptoms, the development of a fatigue /risk index for shift workers

JEL Classification: I15, M54, M55

Introduction

In modern society, shift work has become a very common phenomenon. A recent European Union (Eurofound, 2012) Survey on Working Conditions conducted in 2000 estimated that only 24% of the working populations of the 15 EU countries were engaged in 'normal or standard' day work, defined as work between 07:30–8:00 and 17:00–18:00 hours from Monday to Friday. The majority of workers were thus engaged in 'non-standard' work, including shift work and night work, part time work and weekend work. They work in a wide variety of industries including the emergency services, healthcare, the utilities, transport, manufacturing (including oil, gas & chemical industries), entertainment and retail. Poorly designed shift-working arrangements and long working hours that do not balance the demands of work with time for rest and recovery can result in fatigue, accidents, injuries and ill health. Fatigue refers to the issues that arise from excessive working time or poorly designed shift patterns. It is generally considered to be a decline in mental and/or physical performance that results from prolonged exertion, sleep loss and/or disruption of the internal clock. It is also related to workload, in that workers are more easily fatigued if their work is machine-paced, complex or monotonous. Fatigue results in slower reactions, reduced ability to process information, memory lapses, absent-mindedness, decreased awareness, lack of attention, underestimation of risk, reduced coordination etc. Fatigue can lead to errors and accidents, ill-health and injury, and reduced

productivity. It is often a root cause of major accidents e.g. Herald of Free Enterprise, Chernobyl, Texas City, Clapham Junction, Challenger and Exxon Valdez.

1. Fatigue and shift work

Chronology is the science of arranging events in their order of occurrence in time, the use of a timeline or sequence of events. It is also "the determination of the actual temporal sequence of past events. With the development of chronology, occurrences and methodology of behaviours and feelings of a human time perspective is analysed (Bělina, 2012).

Fatigue can be defined as psychophysiological state of a body, derived the reparative attempt to retrieve the psychosomatic functionality of the body that fails. Due to intensity or constant pressure the body is brought to the state of exhaustion. (Đurič, Bratská, a kol., 1997)

Fatigue is a common complaint among those working abnormal hours. It is particularly noticeable after the night shift, less so on the morning shift, and least on the afternoon shift. Fatigue, however, is a complaint that is exceedingly difficult to measure. Some published evidence exists to suggest that there is a reduction in complaints of fatigue after objective improvement in physical fitness. Nevertheless, it remains an important, if vague, symptom which is often cited as a major reason for intolerance to shift work.

Fatigue is one of the main limiting factors of human performance, and it is in the interest of individuals and companies to apply forms and methods of work that respect the patterns of its origin and course, but also those that regulate it in the optimal direction. According to Szarková (2007, s. 206), "fatigue in general is a state of the body caused by exertion, particularly increased activity, resulting in a relative weakening, a negative instinct that functions as a protection mechanism of the body against its damage".

It is important to distinguish between sleepiness and fatigue because ethology and treatment may differ. Hossain *et al.*, (2003)- although fatigue and sleepiness are distinct symptoms, they share many characteristics with each other. Such similarity has contributed to both the difficulty of defining fatigue and the failure of healthcare workers to treat fatigue as an independent phenomenon worthy of assessment and treatment. Both fatigue and sleepiness are prevalent in the general population, especially in primary care settings, however they are frequently equated, and when fatigue alone is reported many healthcare professionals do not consider the complaint serious enough to warrant further assessment or treatment (Pigeon *et al.*, 2003). Due to the use of common terminology to describe fatigue and sleepiness, such as tired, exhausted and worn-out, it has been difficult for patients and healthcare workers alike to differentiate between these two symptoms (Pigeon *et al.*, 2003). In an attempt to aid the discrimination of sleepiness and fatigue, Pigeon *et al.* (2003) have proposed the operationalization of sleepiness as drowsiness, sleep propensity and decreased alertness, and fatigue as weariness, weakness and depleted energy.

Jansen *et al* (2003) - The prevalence of *fatigue* was 18.1% in day workers, 28.6% in three-shift, 23.7% in five-shift, and 19.1% in irregular shift workers. For three-shift and five-shift workers substantial higher fatigue levels were observed compared to day workers at baseline measurement. In the course of fatigue over the 32 months of follow up there were only small and insignificant differences between employees in different work schedules. However, among employees fatigued at baseline, fatigue levels decreased faster over time among five-shift workers compared to fatigued day workers. Shift workers changing to day work reported substantially higher fatigue levels prior to change, compared to those remaining in shift work.

The field study was performed based on a questionnaire about sleep characteristics, environmental work-place exposure and fatigue level. Objective noise exposure was also measured. The samples were composed of 201 shift workers of a chemical industry in France. They were divided into

two age groups (<40 and >40 years). Results: No significant effect of temperature, vibration, chemical agents, ergonomics and psychosocial factors was found on fatigue. However, noise exposure resulted in an increase in subjective fatigue ($P<0.0001$). Older shift workers reported more fatigue than the younger ones ($P<0.01$). Concerning sleep characteristics, sleep duration progressively decreased from evening to morning shifts, night shift being intermediate ($P<0.01$). Older shift workers reported more sleep fragmentation ($P<0.01$), longer sleep duration in the morning shifts ($P<0.05$) and lesser in the night shifts ($P<0.001$). Combined effects of noise exposure and age were observed on sleep quality of night workers ($P<0.01$). Conclusions: Older workers are less able to adjust to night work especially if they work in the noisy environments. (Saremi *et al.*, 2008).

The aim of this study was to examine the rate of fatigue and sleepiness around the shift and non-shift workers and its relation to occupational accidents. This was a cross-sectional study on the workers of Iranian Industrial Mining Group. They included 137 shift workers as the case and 130 non-shift workers as the control. A multi-part questionnaire including demographic characteristics, Piper Fatigue Scale and Epworth Sleepiness Scale were applied. The χ^2 test and *t*-test were used to measure differences between variables. The mean of PFS scores in the two groups was significantly different ($p=0.045$), but the difference in the mean of ESS scores was not significant. Shift workers with the reported accident had a higher score on fatigue than shift workers with no accident ($p<0.001$) whereas the difference in the number of accidents in the two groups was not related significantly to the rate of sleepiness. The rate of fatigue and the number of the work accidents was more in the shift workers. Also, fatigue had a stronger relationship with the occupational accidents as compared to sleepiness. It seems that evaluation of fatigue as compared to sleepiness is a more accurate factor for preventing work accidents. (Halvani *et al.*, 2009).

Shift workers are particularly vulnerable to increased sleepiness, chronic fatigue, and decreased performance, which can adversely impact productivity and safety in military flight operations. Tvaryanas, Thompson (2006) This study examined the association of specific risk factors including work context and shift system details (squadron: remotely piloted aircraft [RPA] vs. manned aircraft [MA]), work/rest guidelines (career field: crewmember vs. maintainer), and participation in deployed operations (environment: home base vs. deployed) on subjective fatigue using standardized and validated fatigue questionnaires. A cross-sectional survey of 172 U.S. Air Force (USAF) personnel was conducted from

October 2004 to May 2005. The study sample was recruited from four different USAF occupational groups involved in some form of shift work to include irregular, rotational, or fixed shifts. Participants reported a mean (SD) of 6.6 (1.8) hours of sleep per day with no differences by squadron, career field, or environment. Mean daily sleep did not correlate with scores on the fatigue questionnaires. Mean scores on the fatigue questionnaires were associated with squadron (mean fatigue score: RPA > MA), but not with career field or environment. There were no significant interaction effects, nor were there significant effects based on the covariates age, gender, and rank. *Conclusion:* Work context, shift system details, or both appeared to best explain the observed differences in fatigue between USAF shift worker populations. Crewmember work/rest guidelines did not appear to be useful for mitigating fatigue associated with shift work. Shift work is intrinsically fatiguing, regardless of whether the shift worker is at home base or deployed.

2. Methodology

The study aims to compare degree of fatigue and rest in relation to diverse work regimes of the employees. The aim can be defined in the following sub. points:

1. If the employees feel different degree of tiredness depending on day vs. night shift
2. Evaluation of the degree of fatigues dependent of the different work regimes
3. Identify fatigue symptoms in different working regimes,

4. Identify fatigue peaks during a 24-hour cycle of employees in different working modes.

Survey respondents were employees of a chosen company active in the labour market in the area of social services. The survey sample consisted of 114 respondents who were selected on the basis of the criterion – shift work. The gender split was the following, 82 respondents from the total number were women (71%) and 32 men (29%). The sample was divided two groups according to the respondent work regime for the purposes of subsequent comparison.

A questionnaire was created by the method of quantitative study. It contained scaled answers with rating options: always -5 points, often -4 points, sometimes -3 points, rarely -2 points, never -1 points. For comparisons, selected items were processed in absolute and relative numbers. Scaled responses were applied to calculate average scores in individual pointers. The results were presented within a risk index. The risk index demonstrates the ratio of people with measured difficulties to the total number of people at risk. The risk index in our case is expressed by the formula.

$$RI = \text{number of people indicating frequency always and often} / \text{total number of respondents.}$$

3. Findings

In the first part the focus was on identifying the frequency of fatigue of respondents after night shift and day shift. Respondents expressed the frequency of fatigue on a scale from 5 (always) to 1 (never).

Table 1. Frequency of fatigue

	After night shift		After day shift	
	Sum	%	Sum	%
5 Always	20	35	0	0
4 Often	17	30	13	23
3 Sometimes	13	23	27	47
2 Rarely	6	10	14	25
1 Never	1	2	3	5
Total	57	100	57	100

As can be seen in Table 1, 35% feels always tired and 30% often feels tired post night shift. After a shift in the day 0% feel always tired and 23% of respondents stated that they feel often feel tired post day shift.

The arithmetic average of the fatigue frequency after night shift is 3.8 and after daily change of 2.8. Scattered on the scale, after a night shift, we are approaching the frequency often and for the post day

shift the frequency sometimes. The risk index for the night shift is 0.64 ($37/57 = 0.64$) and 0.22 a day. ($13/57 = 0.22$).

In the next part, the degree of fatigue the respondents reported after day and night shift was analyzes. Fatigue levels responded by the appropriate scale from 1- don't feel tired, 2 feel little tired, 3 feel somewhat tired, 4 I feel tired, 5 I feel very tired.

Table 2. Fatigue degree/ rate

Fatigue degree/ rate	After day shift		After night shift	
	Sum	%	Sum	%
1 don't feel tired	9	16	1	2
2 feel little tired	15	26	5	9
3 feel somewhat tired	18	32	9	15
4 feel tired	8	14	21	36
5 feel very tired	7	12	22	38
Total	57	100	57	100

As we can see in Table 2. after daily shift, average fatigue is felt by 32% of respondents and 26% of respondents feel little tired. For respondents after night shift, 38% of respondents feel very tired, and 36% of respondents report they felt tired.

The arithmetic mean for the post night shift is 4.0 and after day shift is 2.28. The risk index is in measuring fatigue by expressing the ratio of respondents with high and increased fatigue to the total number of respondents. After night shift, $RI =$

0.75 ($43/57 = 0.75$), after daily shift $RI = 0.26$ ($15/57 = 0.26$).

The symptoms of fatigue were also researched among employees working, who were classified into two groups based on the production's working times. The respondents working in productions with fixed times versus continuous operations running 24/7 were looked upon. Following symptoms of fatigue: nervousness, attention deficit, irritability, error rate and others were preselected.

Table 3. Fatigue Symptoms

	Fixed production times		Continuous production	
	Sum	%	Sum	%
1 - nervousness	12	21	13	23
2 – attention deficit	9	16	8	14
3 -irritability	30	53	18	32
4 - error rate	5	9	12	21
5 - others	1	1	6	10
Total	57	100	57	100

Workers with fixed working hours – fixed production are most often experiencing fatigue with irritability - situational emotional disorders (53%), nervousness (21%) and attention deficit disorder (16%). In the group of workers on a continuous production times, irritability appeared highest (32%), nervousness continued (23%) and error rate of (21%) are most common symptoms.

The time of the day and its influence on the employee tiredness were equally research in contexts of respondents experiencing different working regimes experience a peak of fatigue. We were also interested in whether the peak of fatigue interfered with employees' working time.

Table 4 Fatigue over a 24-hour cycle

	Fixed production times		Continuous production	
	Sum	%	Sum	%
8:00 - 12:00	1	1	4	7
12:00 - 16:00	25	44	17	30
16:00 - 20:00	10	18	11	19
20:00 - 24:00	15	27	11	19
after 24:00	6	10	14	25
Spolu	57	100	57	100

As the table n.4 suggest, for workers with fixed production time, the highest levels of tiredness felt between 12.00 and 16.00 (25%) and then from 20.00 to 24.00. Also, in the case of workers employed in non-stop productions, the peak of fatigue is between 12.00 and 16.00 (30%) and 24.00 (25%).

Conclusion

Our findings revealed differences in the risk index. The risk index for the night shift is $RI = 0.64$ and after day shift $RI = 0.22$. This implies that employees experience differences in frequency and rate of fatigue arising after day shift and fatigue arising after night shift. The arithmetic average of the fatigue frequency after night shift is 3.8 and after day shift of 2.8. Scattered on the scale, after a night shift, we are approaching the frequency often and after a day shift the frequency sometimes is reached.

Secondly the variation between night shift and day shift regimes were continuously assessed through the questionnaire. The arithmetic average of fatigue after night shift is 4.0 and after day shift of 2.28. When

asked how tired workers felt, further degree of variation was identified between the two regimes. Post night shift largest proportion felt very tired, whereas post day shift largest proportion felt somewhat tired.

Similarly the difference was also found in the risk index, where night shift followed a higher trend as the day shift. Post night shift risk index (RI) was defined as 0.75, and post day risk index was of 0.26.

Our findings further indicate that respondents report the difference in fatigue symptoms in different working modes. We found the difference in the symptom of discontent/irritability amongst the employees of fixed operation and the error rate in the respondents of continuous operation.

The peak of fatigue during the 24-hour cycle of workers in different working modes was recorded as follows: For workers of fixed production times the greatest fatigue is felt between 12.00 and 16.00 (25%) and then from 20.00 to 24.00 (15%). In the case of non-stop workers, peak fatigue also occurs between 12.00 and 16.00 (30%) and 24.00 (25%).

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