

DISTRIBUTION OF ECONOMIC OPPORTUNITIES OF RESIDENTS

Ilona Kiaušienė*

Aleksandras Stulginskis University

Abstract. Economic independence is a compulsory condition in order to make it possible for residents to control their life, to make the certain decisions and implement them. Rapid globalization processes and changing economic conditions provide Lithuanian residents not only with new opportunities, but also with a number of negative challenges. This leads to the need to analyze and evaluate the distribution of economic opportunities of residents. The paper aims to evaluate the distribution of economic opportunities among Lithuanian population by counties based on the integrated indicator. The following tasks were set in order to reach the aim of the research: 1. To explore influencing factors to economic opportunities of residents. 2. Grounding on the completed integrated indicator to assess economic opportunities of residents in Lithuania by counties. Study results suggest that economic opportunities of residents depend on education, gender, employment opportunities, wage differentiation, etc. Occupancy is a very important factor, which ensures economic independence of individuals. Statistical data analysis shows that the differentiation of economic opportunities of residents is formed on the regional level: in different counties, cities and villages, rural residents have uneven opportunities. The calculated integrated indicator has shown that the best situation belongs to Vilnius County (1st place) and the worst situation considering the integrated indicator belongs to Marijampolė County (10th place). The value of the integrated indicator of Marijampolė County is even 88.6% lower as compared to the corresponding indicator of Vilnius County.

Key words: economic opportunities, labour market segmentation, employment, Lithuania.

JEL code: J42, O12, R10.

Introduction

The rapidly changing pace of life is constantly changing economic and social conditions; therefore, modern society has to deal with a variety of challenges. All these and other changes largely depend on new opportunities for individuals in the allocation of economic resources. Theoretically free market system provides all citizens with an opportunity to seek for economic independence. However, it happens differently in a real life.

* dr. in economics, lecturer of the Business and Rural Development Management Institute, Faculty of Economics and Management, Aleksandras Stulginskis University.
E-mail: ilona.kiausiene@asu.lt. Tel.: +370 37 752214

A very significant factor, securing individuals' economic opportunities in the society, is employment. The employment differs in versatile labour market segments. Therefore scientists were always interested in the labour market and the processes taking place therein, because the labour market is not perfect. It is distinguished for exclusivity, sophisticated morphological content and complicated mechanism of functioning, whereas labour market segmentation is one of the factors affecting the distribution of different individuals in the labour market (Hoffman, 1986; Kaufman, 1986; Bosworth, Dawkins, Stromback, 1996; Leontaridi, 1998; Matiušaitytė, 2005; Martinkus, Beržinskienė, 2005; Jacobsen, 2007; Martinkus, Stoškus, Beržinskienė, 2009; Blau, Ferber, Winkler, 2010; etc.). The situation of residents at different segments of the labour market differs; therefore, it is necessary to analyze occupancy changes, salary change tendencies, etc.

The object of the research: distribution of economic opportunities of residents.

The objective of the research: to evaluate the distribution of economic opportunities among Lithuanian population by counties based on the integrated indicator.

The following tasks were set in order to reach the goal of the research:

1. To explore influencing factors to economic opportunities of residents.
2. Grounding on the completed integrated indicator to assess economic opportunities of residents in Lithuania by counties.

Research methods: the analysis of scientific literature, synthesis, comparison, summary, time series, correlative analyses, Min-Max indexes, and mean indexes.

Research results and discussion

1. Factors determining economic opportunities of residents

The most important decisions in human life are related to work, because people spend the majority of their life time at work. The decision on when to start working, on how much to spend at work and on the field of work, is very important for each person, who determines different economic opportunities of individuals.

The opportunities of economic independence at different life stages are different and depend on age, education, lifestyle, occupational ambitions, etc. It has been emphasized recently that education is one of the most important factors for the development of modern knowledge economy, whereas not only educated person, but also the society benefits. Gižienė, Simanavičienė (2012) argue that the history of human development confirms the relationship between education and economic development levels. Successful economic development increasingly depends on the amount of investments in people, intellectual potential and development.

In the life of an individual, education is important, because, according to Gižienė and Simanavičienė (2012), education and qualification of an individual are of key importance to the

quality of his/her work and career opportunities. The choice of the occupation and qualification development determines the differences in salary among the employees: persons with the highest education can usually expect to receive a better salary. Moreover, Beržinskienė and Raziulytė (2013) emphasize that scientific research has determined that during the economic decline in the Baltic States, the difference in salary between people with higher education and those who do not have it has increased (from 51% to 67%).

Salary is one more indicator determining the economic well-being of an individual. Salary is differentiated, having evaluated the qualification of an employee, his/her education, work skills, personal qualities, etc. In the labour market, according to Beržinskienė and Raziulytė (2013), wage differentiation is shaped on the regional level first.

Employment is a significant factor securing individuals economic opportunities. According to Martinkus, Beržinskienė (2005), certain situations are developed in the labour market mechanism limiting full employment opportunities. The functioning of the labour market is determined by the interaction between various market segments and sectors that are different in regional, demographic, social, professional, qualification and other aspects. It should be noted that the labour market, which is under the influence of social and political forces, is split into separate segments (partial labour markets), which function and adjust to the environmental changes separately (Martinkus, Stoškus, Beržinskienė, 2009).

Jakštienė, Beržinskienė (2011) distinguish the following ten labour market segmentation groups: economic, social, demographical, and geographical segmentation; segmentation by professional level, by workplaces, by individuals' behaviour in the labour market, psychological/psychographic segmentation, vertical segmentation, and horizontal segmentation. Labour market segmentation is the division of the labour market to individual market segments or parts, which are distinguished for certain characteristics of the segment. However, the labour market segment is a defined group of participants of the labour market, which is characterised by certain features typical to that group.

It can be said in summary that emphasizing distribution of economic opportunities of residents, special attention is often paid to the events in the labour market. Labour market has certain characteristics which distinguish it from other markets: it has a sophisticated morphological content and functions under different economic conditions. The formation of segments in today's labour market is determined by a number of factors (economic, social, demographic, etc.). Due to the fragmentation of the labour market, there are separate labour markets; therefore, the opportunities for economic independence of individuals differ.

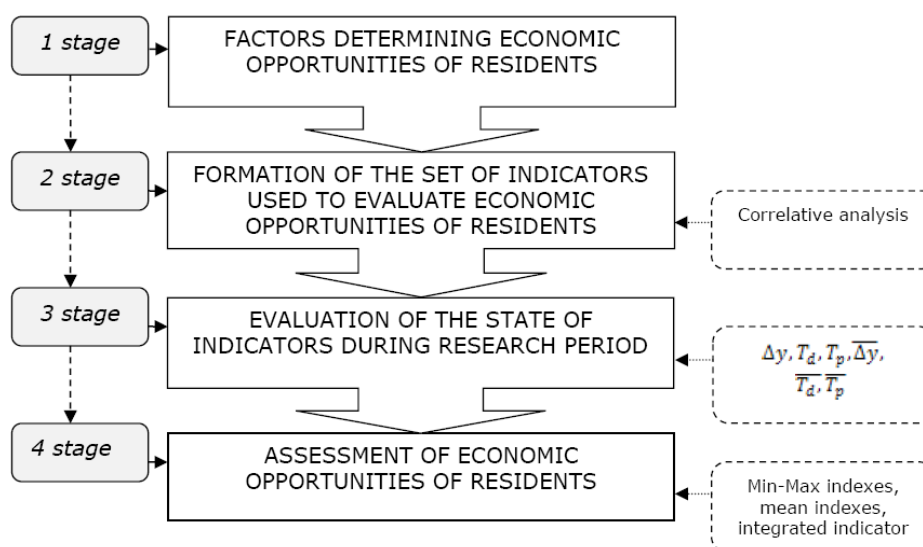
2. The methodology for the assessment of economic opportunities of residents

In order to assess economic opportunities of residents, territorial units are defined first. Counties are the main territorial units, which are compared by selected indicators. In addition, certain data is also analyzed by the place of residence (city and village). While selecting indicators to be analyzed, evaluated and grouped by counties, a correlation analysis was

carried out, i.e. the interdependence of indicators was calculated, on the basis of which statistically less dependent indicators were distinguished. The calculated correlation coefficients and p values show a strong relationship between some indicators; therefore, the final set of evaluation indicators used to assess economic opportunities of residents includes the least correlating indicators. The final set includes the following indicators:

- The ratio of residents with high and secondary education, *in percent* (e_1).
- Occupancy level of persons aged 15-64, *in percent* (e_2).
- The average monthly gross salary, *EUR* (e_3).

The data of Statistics Lithuania and EUROSTAT was used for the analysis of the distribution of economic opportunities. The evaluation of economic opportunities of residents covers four stages (Fig. 1).



Source: author's construction

Fig. 1. Evaluation stages of economic opportunities of residents

As seen in Fig. 1, having selected evaluative indicators of economic opportunities of residents, economic opportunities of residents can be evaluated and the situation in different areas can be compared. When evaluating the condition of the phenomenon during the analyzed period, the time series is analyzed; the analytical and the average change indicators of the time series are also calculated (Bartosevičienė, 2011; Cortinhas, Black, 2012): the absolute dynamic increase or decrease in level (Δy), the rate of the increase/decrease (changes) (T_d), the rate of dynamic increase/decrease (changes) (T_p), the average absolute change ($\overline{\Delta y}$), the average rate of increase/decrease (changes) ($\overline{T_d}$), the average rate of dynamic changes (increase/decrease) ($\overline{T_p}$).

There are two methods used to evaluate economic opportunities of residents: Min-Max method and Mean method. The Min-Max index is calculated first. It is used to evaluate the situation of the territorial unit comparing it to the territorial units reflecting the worst and the

best situation. The actual value of the indicator is a specific value of a certain indicator of a particular territorial unit. The value of the territorial unit having the lowest indicator is closer to 0, and the one having the highest indicator is closer to 1. Index values of the rest of the territorial units are located in the interval (0;1). The Min-Man index is calculated according to the following formula (Misiūnas, Svetikas, 2003):

$$I_{ij}(t) = \frac{x_{ij}(t) - \min_i(x_{ij})}{\max_i(x_{ij}) - \min_i(x_{ij})} \quad (1)$$

Where $\min(x_{ij})$ and $\max(x_{ij})$ are the minimum and the maximum values of the indicator j (according to all territorial units), x_{ij} – value of indicator j of the territorial unit i .

The index for each territorial unit is calculated in respect of each indicator (Misiūnas, Svetikas, 2003):

$$I_{ij}(t) = \frac{x_{ij}(t)}{x_{Resp.j}(t)} \quad (2)$$

Where $x_{ij}(t)$ – value of the indicator j of the territorial unit i during the period of time t ; $x_{Resp.j}(t)$ – the average value of the indicator j of the entire country during the period of time t .

Having calculated the values of the indices by this method, the territorial unit the value of which is equal to the average of all territorial units or to the value of the entire country, has the index value of 1. Territorial units the values of which are below the average will depend to the interval (0;1), and the territorial units the value of which are better than the average based on the indicator analyzed, will have the index value >1 .

The formula of the integrated indicator is as following:

$$I_{EGP} = \sum_{j=1}^j r_j \cdot I_{ij}(t) \quad (3)$$

Where r_j – the weight (significance) of the indicator j ; $I_{ij}(t)$ – the Min-Max index.

3. Evaluation of economic opportunities of residents

The most important factor of the development of any region, according to Kuliešis and Pareigienė (2011), is human capital, and the measure of its competitiveness is the ability to attract human resources. However, during the analysis one of the aspects of human capital, namely the changes of the residents in the region, it can be noticed that the number of residents has been constantly decreasing in the entire territory of Lithuania, except the capital Vilnius. According to Statistics Lithuania, at the beginning of 2013, there were 2971.9 thousand of permanent residents living in Lithuania, i.e., 31.7 thousand residents less than at the beginning of 2012. A quarter of residents lived in Vilnius County and one-fifth lived in Kaunas County. In terms of population, the smallest counties are those of Tauragė, Utena, Telšiai, Alytus and Marijampolė. There were from 3.6 to 5.3 % of residents of the country residing in them (Statistics Lithuania, 2013).

There are many educated people living in Lithuania. At the beginning of the academic year of 2012–2013, there were 587 thousand students or pupils or every fifth resident studying in Lithuania (Statistics Lithuania, 2013). However, during the analysis of the situation in separate counties, it can be noted that in 2010, the number of persons in the 25–64 age group with higher education has changed in Klaipėda and Utena counties, as compared to 2009: in Klaipėda County, it increased by 10.0%, and in Utena County, on the contrary, it decreased by even 15.8%. In 2013, as compared to 2012, the number of people with higher education in 25–64 age group has increased in Marijampolė County (23.9%) and Telšiai County (21.4%) and decreased in Tauragė County (16.0%).

During the analysis of the differences between the residents of rural areas and towns, it can be noted that residents from rural areas tend to have lower education. Even though certain rural areas (e.g. municipalities of Visaginas and Birštonas, Kaunas district) can be proud of considerable number of residents with higher education, in most of the rural areas, the ratio of residents with higher and secondary education is relatively low (e.g. in municipalities of Pagėgiai and Kalvarija, districts of Pasvalys, Skuodas and Pakruojis, the ratio of residents with higher and secondary education varies from 36.3% to 49.6%). This suggests that for the residents of rural areas, it is more difficult to integrate themselves into the labour market because employment is closely related to education, which is an important factor in order to ensure economic independence of individuals.

One of the most important purposes of all countries is to increase resident employment in the country in order to ensure the reduction of unemployment. Changes during the recent years show that the European Employment Strategy paved the way for the European Union to make progress fighting unemployment and creating more and better workplaces. According to the Results of the 2011 Population and Housing Census of the Republic of Lithuania (2013), there were 1 million 175 thousand persons working in the country. In 2011, there were 454 employed persons per 1000 population aged 15 and older. Urban employed persons made up 73.4%, rural – 26.6% of the total employed population. Men made up 47.5%, women – 52.5% of the total employed population. Such differences in employment could be determined by the decrease in the number of working men in the construction sites, industrial companies, i.e. in those sectors, which are frequently populated by men. Male and female employment rates in different age groups were different. The male employment rate was the highest in the age group of 30–34 (72.4%), the female one – in the age group of 40–44 (75.9%).

Analyzing general dynamics of employment level in Lithuania in 2009–2013, uneven change of this indicator is clearly visible: in 2010, as compared to 2009, the level of employment has dropped by 2.3 percentage points, but in 2013, the general level of employment reached 63.7% and comparing with 2011, has increased by 1.7 percentage points. The analysis of statistical data shows that the employment rate in different counties of Lithuania has been changing unevenly: in 2010–2013, the average level of employment raised every year in Klaipėda County (4.6%), Vilnius County (4.6%) and Kaunas County (4.5%). The level of

employment changed during the analyzed period very insignificantly in Marijampolė and Alytus counties: during the period of 2010–2013, it increased every year by the average of 1.6% and 1.7%, respectively. This situation could have been influenced by a small number of work positions, the lack of labour market measures designated to reduce the unemployment and/or the inefficiency thereof, etc.

According to the data of Statistics Lithuania (2014), gross wages that have been decreasing since 2010 in the state economy, have started to grow in all areas since 2011. Most of the positive changes were noticed in 2013, when the average gross monthly wages in the entire state economy including the individual companies exceeded the level of 2012 (5.1% or EUR 3.2) and constituted EUR 646.3 (Table 1).

Table 1

The average gross monthly wages in Lithuania counties, EUR

Territory	2009	2010	2011	2012	2013	Min- Max indexes	Mean indexes
						2013	
Vilnius County	675,4	659,9	677,2	703,8	732,9	1	1,1340
Lithuania	595,5	575,8	592,5	615,1	646,3		1
Klaipėda County	595,3	576	586	603,8	628,7	0,5387	0,9728
Kaunas County	571,7	547,8	568,9	589,3	623,8	0,5170	0,9652
Telšiai County	541,3	517,5	533,9	548,4	582,5	0,3342	0,9013
Utena County	541,2	505,3	515,8	530,4	560	0,2346	0,8665
Alytus County	508,6	490,1	504,4	521	556,5	0,2191	0,8611
Panevėžys County	513,1	491,6	511,6	528,6	555,9	0,2165	0,8601
Šiauliai County	500,9	483,3	493,8	506,3	537,2	0,1337	0,8312
Marijampolės County	478,2	470	480,5	499,8	532,4	0,1124	0,8238
Tauragė County	467,7	455,5	464,3	480,6	507	0	0,7845

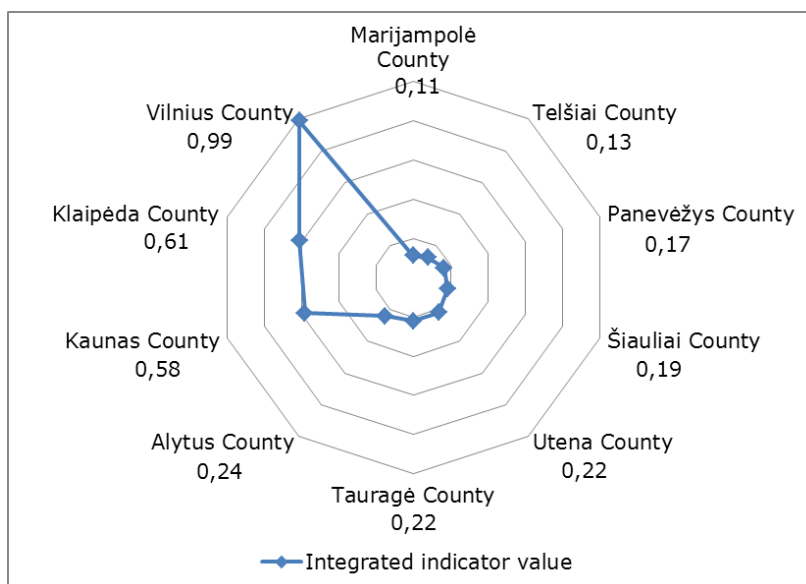
Source: author's calculations based on Statistics Lithuania, 2014.

Min-Max indices calculated (Table 1) in 2013 show that the highest gross monthly wages in 2013 were in Vilnius County (EUR 732.9) and the lowest gross wages were received by the employees of Tauragė County (EUR 507.0). The gap in wages between these counties consisted EUR 225.9. Only in one county, namely Vilnius County, the average gross wages during the analyzed period were higher than the national average. Statistical data analysis shows that during the period from 2009 to 2013, gross monthly wages were increasing by 2.1%. The average increase in gross monthly wages during the analyzed period was highest in Marijampolė County (2.7%), and the lowest in Utena County (0.9%). According to Tamašauskienė, Šileika and Mačiulytė (2008), regional differences are determined by regional economic development and expansion, conditions of the labour market, legislation, the activity of the trade union, determination of the minimum wages, efficiency.

For most of the Lithuanian residents, salary is the main source of livelihood; therefore, its size is very important. According to the Results of the 2011 Population and Housing Census of the Republic of Lithuania (2013), a salary was indicated as the main source of livelihood by 35.9% of the population. A big part (27.5%) of the population indicated that they were

supported by the family and/or other persons. The main sources of livelihood differed for the urban and rural population. The main source of livelihood for the urban population was a salary (40.1% of the total urban population), while rural population most often indicated that they were supported by the family and/or other persons (28.9% of the total rural population).

Concluding on the distribution of economic activities among Lithuanian residents in respect of territorial aspect, the integrated indicator (I_{EGP}) has been calculated. It shows that the best situation in terms of economic opportunities of residents is found in Vilnius County (Fig. 2).



Source: author's calculations.

Fig. 2. **Distribution of Lithuanian counties based on the evaluation of economic opportunities of residents**

The situation in Klaipėda County is better than the one in Kaunas County (Fig. 2): it is in the second position, and the value of the indicator is 4.7% higher than the value of the integrated indicator of Kaunas County. The worst situation, based on the integrated indicator of economic opportunities, is taken by Marijampolė County (10th place) (Table 2).

Table 2

Lithuanian counties based on distribution of economic opportunities of residents

Territory	Rank e_1	Rank e_2	Rank e_3	Rank I_{EGP}
Vilnius County	4	5	7	1
Klaipėda County	2	3	3	2
Kaunas County	3	2	2	3
Alytus County	8	8	9	4
Tauragė County	7	9	6	5
Utena County	6	6	8	6
Šiauliai County	10	4	10	7
Panevėžys County	9	10	4	8
Telšiai County	5	7	5	9
Marijampolė County	1	1	1	10

Source: author's construction.

The value of the integrated indicator of Marijampolė County is even 88.6% lower as compared to the corresponding indicator of Vilnius County. Economic indicators of Telšiai, Panevėžys and Šiauliai counties are also quite poor: they take places 9, 8 and 7, respectively (Table 2). Moreover, even in seven out of ten districts the value of the indicator ranges from 0.11 to 0.24. It shows that in most of the Lithuanian counties, the economic opportunities of the residents are limited, thus, paving the way for economic and social problems. It is noticeable that employment in such areas is worse, the wages received by the employees are lower, residents are pushed to the outskirts of the society and sustainable development of regions is limited.

Conclusions

1. Economic opportunities of residents depend on the level of education, sex, working conditions, employment opportunities and wages. The differentiation of distribution of economic opportunities among residents is formed on the regional level: in different counties, cities and villages, rural residents have uneven opportunities to pursue economic independence.
2. Economic opportunities of residents are evaluated based on the three indicators selected (the ration of residents with higher and secondary education, %; level of employment of persons in the 25–64 age group; average gross monthly wages, EUR) and comparing the situation in different counties. The calculated integrated indicator has shown that the best situation in terms of economic opportunities belongs to Vilnius County (1st place) and the worst situation considering the integrated indicator of distribution of economic opportunities belongs to Marijampolė County (10th place). The value of the integrated indicator of Marijampolė County is even 88.6% lower as compared to the corresponding indicator of Vilnius County.
3. Economic opportunities of Lithuanian residents are limited, because the value of the calculated integrated indicator even in seven out of ten districts is very low, ranging from 0.11 to 0.24. Such situation can be partially determined by a small number of jobs, the lack or insufficient amount of work market measures designated to reduce unemployment and/or the insufficiency thereof, poor employment opportunities, low wages and/or other problems.

Bibliography

1. Bartosevičienė, V. (2011). *Ekonominės statistikos pagrindai*. Kaunas: Technologija. p. 112.
2. Blau, F. D.; Ferber, M. A.; Winkler, A. E. (2010). *The Economics of Women, Men, and Work*. Sixth Edition. Pearson Education. p. 428.
3. Bosworth, D.; Dawkins, P.; Stromback, Th. (1996). *The Economics of the Labour Market*. USA: Longman. p. 460.
4. Cortinhas, C.; Black, K. (2012). *Statistics for business and economics*. Wiley: John Wiley & Sons, Ltd. p. 834.

5. Beržinskienė, D.; Raziulytė, S. (2013). Darbo užmokesčio diferenciacija Lietuvos darbo rinkoje. *Studijos šiuolaikinėje visuomenėje*, Nr. 4 (1), pp. 9-21.
6. Gižienė, V.; Simanavičienė, Ž. (2012). Žmogiškojo kapitalo vertinimo koncepcija. *Business systems and economics*, No. 2 (1), pp. 116-133.
7. Tamašauskienė, Z., Šileika, A., Mačiulytė, A. (2008). Theoretical and practical aspects of wages differentiation. *Socialiniai tyrimai*, 3(13), pp. 165-178.
8. Results of the 2011 Population and Housing Census of the Republic of Lithuania. (2013). *Statistics Lithuania*, p. 674. Retrieved: <http://osp.stat.gov.lt/temines-lenteles>. Access: 16.12.2014.
9. Hoffman, S. (1986). *Labor market economics*. p. 354.
10. Jacobsen, J. P. (2007). *The Economics of Gender*. 3rd ed. Blackwell Publishing. p. 482.
11. Jakštienė, S.; Beržinskienė, D. (2011). Darbo rinkos segmentų klasifikavimo modelis. *Ekonomika ir vadyba: aktualijos ir perspektyvos*, Nr. 2 (22), pp. 44-54.
12. Kaufman, B. (1986). *The economics of labor markets and labor relations*. The Dryden Press. p. 625.
13. Kuliešis, G.; Pareigienė, L. (2011). Lietuvos regionų depopuliacijos prielaidų tyrimas. *Management theory and studies for rural business and infrastructure development*, Volume 5 (29), pp. 116-125.
14. Leontaridi, M. R. (1998). Segmented Labour Markets: theory and evidence. *Journal of Economic Surveys*, Volume 12, No 1, pp.63-101. Retrieved: <http://www.blackwell-synergy.com/doi/pdf/10.1111/1467-6419.00048>. Access: 29.11.2014.
15. Statistics Lithuania. (2013). *Lietuvos apskritys 2012*. Retrieved: <http://www.stat.gov.lt/>. Access: 16.12.2014.
16. Statistics Lithuania. (2014). *Oficialiosios statistikos portalas, Gyventojai ir socialinė statistika*. Retrieved: <http://osp.stat.gov.lt/rodikliai>. Access: 29.12.2014.
17. Martinkus, B.; Beržinskienė, D. (2005). *Lietuvos gyventojų užimtumo ekonominiai aspektai*. Kaunas: Technologija. p. 171.
18. Martinkus, B.; Stoškus, S.; Beržinskienė, D. (2009). Changes of Employment through the Segmentation of Labour Market in the Baltic States. *Inžinerinė ekonomika – Engineering Economis*, Volume 3, pp. 41-48.
19. Matiušaitytė, R. (2005). Darbo rinkos segmentavimas. *Tiltai*, Nr. 2 (31), pp. 15-21.
20. Misiūnas, A.; Svetikas, Ž. (2003). Lietuvos regionų ekonomikos netolygumų vertinimai. *Ekonomika. Mokslo darbai*, Nr. 64, pp. 84-94.