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## **ON THE STRUCTURAL COMPOSITION OF LATVIA'S ECONOMY: A DETAILED ACCOUNT OF ITS SPECIALIZATION AND REGIONAL DIFFERENTIATION**

Regionally balanced economic development is one of the main aims of the European Union, which is reinforced by the high regional differentiation not only within the national borders, but also between the countries. Latvia is among the countries, which experience high regional differentiation. The dispersion of GDP per capita in Latvia is one of the highest in the European Union. The data on economic activity indicate that the increase of the level of competitiveness is delayed by the high inter-country differentiation, which is mostly dependent on the structural composition and regional specialization of the economy. Already for a rather long period of time the capital city region in Latvia has been ahead in the level of economic development, and other regions have not been able to compete with the capital. The article tries to show the importance of the structural composition and the specialization of the economy in the formation of high regional differentiation in Latvia, special attention being paid to the regions' contribution to the country's GDP, as well as the contribution of the economic sectors to the regions' GDP. Considering the differences in the structural composition among Latvian regions and the kinds of specialization, the present research clarifies that the branch structure of the economy is an important factor that affects and promotes high regional differentiation in Latvia. This is mainly because of the specialization on labour-intensive branches while only high-technology specialization contributes to the economic growth that can be observed in the Riga region.

**Key words:** *regional differentiation, branch structure of economy, specialization, Latvia*

**JEL Classification:** *O11 – Macroeconomic Analyses of Economic Development; R11 – Regional Economic Activity: Growth, Development, and Changes; R58 – Regional Development Policy*

### **Introduction**

The new member countries of the European Union are experiencing considerable regional differentiation, so that economic development is not regionally balanced and is mostly concentrated in certain regions. Basically, it is often the capital city and its surrounding areas that significantly contribute to the dispersion of GDP per capita. As a result, there are few other regions in these countries that are able to compete with the capital. Such a great dependence on one region provides risks for the country's development. This exactly describes the situation in Latvia.

Riga region provides more than  $\frac{3}{4}$  of the country's GDP and other regions do not have possibilities to catch-up the capital, generally due to the specialization spread among the regions. The branch structure of the economy in Riga region should be mentioned as another important issue. The relatively low share and importance of the tradable good sector, taking into account the significance of Riga region in the country's GDP, decreases the possibility for raising the overall competitiveness.

Despite the fact that some authors (Asheim, Boschma, Cooke, 2011) argue that it is difficult to predict, which sector or region in the future will prove to be successful, because usually, progress develops spontaneously and every region has its own potential, the European Commission indicates that "well-considered specialization is a key element in Europe's efforts to assist member countries and regions to overcome the economic crisis" (Eiropas Komisija, 2012), as well as to reduce regional disparities.

Smart specialization can give a significant contribution to the process of transformation of a country's specialization and, on the other hand, facilitate modernising of the "traditional sectors" and easing their move into the knowledge economy in case if the specialization remains unchanged (Rusu, 2013).

At present, Latvia experiences differences in specialization among the regions; what is more, specialization on the labour intensive branches in most cases characterizes the Latvian regions, except Riga region. This, in turn, does not correspond to the commonly accepted opinion that only specialization on high-technology branches contributes to the economic growth.

The abovementioned characteristics of the Latvian economy in the context of structural composition and specialization of economy create a necessity for a detailed analysis and search for linkages between these indicators and regional differentiation. The issue of reaching the balanced economic growth is topical both for Europe and for Latvia. Searching for causes leading to such a high regional differentiation in Latvia indicates on the significance of the structural composition of the economy (see for example, Šipilova, 2013). In this article, we continue to search for the causes and try to evaluate the branch structure of the economy and the specialization in the Latvian regions as the factors that affect the formation of high regional differentiation and thus hinder the economic growth with special attention to the regions' contribution to the country's GDP, as well as the contribution of the economic sectors to the regions' GDP.

The article is organized as follows: Section 2 provides a short experience overview about how structural composition and specialization are linked with the regional disparities, Section 3 offers the results of the empirical analysis, Section 4 presents the conclusion.

### **The structural composition, specialization and regional disparities of the economy: a short experience overview**

Regional economic differences within countries are important, especially in countries with low and average incomes (Shankar, Shan, 2003). The European Union actively works to reduce inequality in territorial development, because high regional differentiation exists among European regions and not only across national borders, but also within many countries (Senger, Mulquin, 2012). This issue is particularly important in the new member states of the European Union (Tvrdon, Skokan, 2011). The new member states are experiencing serious regional differentiation, because the economic development has not been regionally balanced and has been mostly concentrated in certain regions. The European Union's cohesion policy provides the opportunities for minimizing the regional differentiation and the European Union's structural funds are among the main instruments of this policy. Although, the research results suggest that the structural funds do not always contribute to a catching-up process. The studies on the European Union indicate that the convergence between countries is not conducive to regional convergence (Giannetti, 2002).

To get the greatest benefit from the regional policy and to improve the competitive environment, support of the R&D activities and structural change in the economy is needed (De Lobel, Rodriguez-Pose, 2005). Therefore, specialization could be mentioned as an important instrument to reduce the regional differentiation (Aiginger, 1999). Moreover, the European Commission indicates that "well-considered specialization is a key element in Europe's efforts to assist member countries and regions to overcome the economic crisis. It is an innovative strategy for the transformation of the local economy..." (Eiropas Komisija, 2012) and thus also overcome such a high regional differentiation. The research results on Western Europe partly demonstrate that specialization could contribute to the growth of the income per capita (Amiti, 1999; Welfens, Perret, 2010), however only high-technology specialization provides direct contribution to the growth (Welfens, Perret, 2010).

The research findings indicate that countries with low income levels mainly specialize in the labour-intensive branches in the first stage of catch-up, and only later, after a significant increase in the capital intensity and foreign investments may lead to the changes in the branch

structure of the economy favouring the development of the knowledge-intensive branches (Welfens, Perret, 2010). But, it may not always lead to the desired results. Some authors assume that in many countries the accepted practice to select priority sectors or regions and to create a national-level development policy in their direction can be faulty, because it is difficult to predict which sector or region in the future will prove to be successful. Usually, a new sector, as well as progress develops spontaneously, and each region has its own potential (Asheim, Boschma, Cooke, 2011). Although, it should be noted that experience of the regions in economic activity to a greater or lesser extent could allow them to adequately assess strengths and weaknesses of the economic sectors. Another issue is the availability of funding for the positioning the branch of economy at the local and the national level.

The regional differentiation usually forms under the influence of such factors as geographic location, policy, history and economic activities. The current statement of the regional differentiation in Latvia can be explained by the effectiveness of regional policies, mobility of capital, and polarization of economic activity, but especially by existing structural composition in the economy and specialization among the regions. Basically, it is the capital city and the surrounding areas, which significantly contributes to the dispersion of the GDP per capita (Lackenbauer, 2004).

The European Union's structural funds and other support programs are used to mitigate significant interregional economic differentiation in Latvia. Thus, it may be noted that certain measures to reduce regional disparities are being taken in Latvia, but in general, they are not directed towards activities that encourage certain economic sectors or support the reorganization of the economic structure and the promotion of the regional specialization.

For example, after having become a member of the European Union, Latvia has experienced two opposite trends: (1) the relatively successful implementation of the European Union's cohesion policy, but (2) despite the relatively high activity of the regions in the implementation of the European Union's cohesion policy, the differentiation between Riga region and the rest of the country has increased. Therefore, it could be assumed that in addition to the use of the European Union's structural funds, special attention has to be paid to the branch structure of the economy and its possible correction in accordance with the modern requirements of the economy.

Given the impact of globalization and the global economic downturn, the strategy "Europe 2020" offers to build economic growth on innovative branches, within which high value added is generated (European Commission, 2010). This is why in most European Union's member states, including Latvia, the adjustments in the structure of the economy should be made. At the regional level this process could be supported by the regional policies and the definition of priority industries; however, the unequivocal opinion on these instruments does not exist.

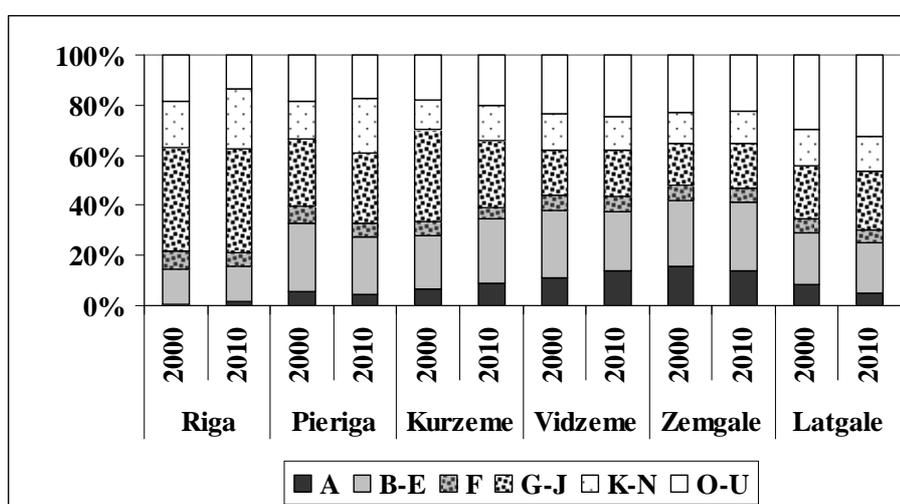
## **Data and Methodology**

The empirical research is based on the data on gross value added by the economic sectors according to NACE 2 Rev. from the Latvian Central Statistical Bureau and the Eurostat in the period of time from 2000 to 2010 using the calculations of such indicators as Structural Change Index (SCI), Location Coefficient (LQ), as well as applying the correlation analysis.

The structural changes index (SCI) (OECD, 1994; Productivity Commission, 1998) reflects changes in the relative significance of the economic sectors; Location Coefficient (LQ) (Florida State University, 2013), in its turn, allows assessing the regional specialization.

## Structural composition, specialization and regional disparities of economy: the experience of Latvia

The statement of high regional differentiation in Latvia is based on the fact that Riga region produces more than half of the Latvian GDP and has twice higher level of GDP per capita, while other regions remain well behind Riga. However, the increase in GDP per capita in Riga region during the period analyzed has been rapid, the share of the region in the country's GDP has remained almost constant (Central Statistical Bureau of Latvia, 2013c, Eurostat, 2013a) what highlights the fact that the strengthening of Riga region's positions almost do not contribute to the improvement of the overall competitiveness. Therefore it is important to stimulate the regional development and thus overcome the regional polarization. The increase of competitiveness is delayed also by the high inter-country differentiation, which are mostly dependent on the structural composition and specialization in the country's regions.



A – Agriculture, forestry and fishing, B–E – Industry and energetic, F – Construction, G–J – Trade, accommodation and food service activities, information and communication, K–N – Financial, insurance, scientific and administrative activities; real estate activities, O–U – Public administration and defence; compulsory social security, education, human health and social work activities, other activities.

**Figure 1. The structural composition of economy in the Latvian regions  
in 2000 and 2010, %**

**Source:** Eurostat 2013c

The structural composition of the economy in Riga region, Kurzeme and Vidzeme shows that the dominant one is the non-tradable sector (see Figure 1). Although, in today's post-industrial economy the service sector gives substantial contribution to the processes of economic growth, the recent tendencies in the global economy indicate the necessity to raise the importance of manufacturing. The higher share of manufacturing and consequently the bigger importance of this sector for economic growth can be observed for Pieriga, Zemgale and Latgale regions (see Figure 1, Table 1). Also the agriculture sector is very important in these regions.

Table 1

### Changes in the branch structure of economy in the Latvian regions in 2000–2010

Regions	SCI values	Max changes in % by economic activity			
		%		Economic activity	
		+	–	+	–
Riga region	7.25	5.6	-5.1	K–N	O–U
Pieriga region	7.80	6.3	-4.5	K–N	B–E
Kurzeme region	10.35	3.6	-9.8	B–E	G–J
Zemgale region	2.20	1.0	-1.5	G–J	A
Vidzeme region	4.90	2.7	-3.0	A	B–E
Latgale region	5.25	3.1	-3.1	O–U	A

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**Source:** the authors' calculations based on the data provided by Central Statistical Bureau of Latvia (2013d).

Despite the different structural composition among the Latvian regions, the data indicate that changes in the branch structure of the economy in the Latvian regions are equivalent and SCI values do not demonstrate that fundamental changes in the structural composition have occurred (see Table 1) which could mean that the existing situation has formed during long period of time.

For better understanding what the branch structure of economy mean in the processes of regional differentiation, it would be useful to examine the regions' contribution to the country's GDP, as well as the contribution of the economic sectors to the regions' GDP (see Table 2, Table 3).

Despite the pronounced leadership of Riga region in the level of economic development, all regions provide an equally important contribution to the growth of the country's GDP (see Table 2a). The results indicate the equal contribution of the tradable and non-tradable sectors which could weaken the competitiveness of each region, as well as the overall country's competitiveness. This can be partly explained by the flows of foreign investments during the period analyzed which have been mostly received by the sectors of service and agriculture. In both cases a relatively little value added is produced, although, the collected data indicates the relatively rapid growth of the value added in these sectors (Central Statistical Bureau of Latvia, 2013b).

The second important trend demonstrates a similar amount of investments and the equivalent increase in the value added in the industry sector (B–E) and the service sector (G–J) which indicates the absence of clearly defined priorities in the economy, as well as do not contribute to the increase of the country's competitiveness.

The calculations indicate that the changes in the branch structure of the economy in the Latvian regions are similar and linked, but there is a difference in the importance and the meaning of every branch in the regional economy.

Table 2b summarizes the correlation coefficients between GDP and the value added by sectors in Latvian regions. The analysis of the calculations leads to the following conclusions:

- strong linkage between GDP and construction and weak linkage between GDP and agriculture are the main features which provide for the difference between Riga region and other regions;
- strong linkage between GDP and service sector in all the regions, except Latgale region, indicates the tendencies, which cannot lead to a high-technology specialization among the regions which could contribute to the economic growth.

Table 2

### Contribution of the regions and economic sectors to the Latvian GDP

(a) Correlation coefficients between Latvia's GDP and gross value added by the economic activity of the Latvian regions in 2000–2010

<b>Riga region</b>	<b>GDP Latvia</b>	<b>A</b>	<b>B–E</b>	<b>F</b>	<b>G–J</b>	<b>K–N</b>	<b>O–U</b>
GDP Latvia	1	.508	.961**	.877**	.992**	.993**	.935**
<b>Pieriga region</b>	<b>GDP Latvia</b>	<b>A</b>	<b>B–E</b>	<b>F</b>	<b>G–J</b>	<b>K–N</b>	<b>O–U</b>
GDP Latvia	1	.897**	.960**	.933**	.872**	.948**	.967**
<b>Vidzeme region</b>	<b>GDP Latvia</b>	<b>A</b>	<b>B–E</b>	<b>F</b>	<b>G–J</b>	<b>K–N</b>	<b>O–U</b>
GDP Latvia	1	.806**	.958**	.928**	.993**	.978**	.943**
<b>Kurzeme region</b>	<b>GDP Latvia</b>	<b>A</b>	<b>B–E</b>	<b>F</b>	<b>G–J</b>	<b>K–N</b>	<b>O–U</b>
GDP Latvia	1	.874**	.948**	.884**	.696*	.977**	.960**
<b>Zemgale region</b>	<b>GDP Latvia</b>	<b>A</b>	<b>B–E</b>	<b>F</b>	<b>G–J</b>	<b>K–N</b>	<b>O–U</b>
GDP Latvia	1	.855**	.926**	.933**	.991**	.990**	.970**
<b>Latgale region</b>	<b>GDP Latvia</b>	<b>A</b>	<b>B–E</b>	<b>F</b>	<b>G–J</b>	<b>K–N</b>	<b>O–U</b>
GDP Latvia	1	.299	.962**	.896**	.986**	.962**	.925**

(b) Correlation coefficients between the region's GDP and gross value added by the economic activity of the Latvian regions in 2000–2010

<b>Riga region</b>	<b>GDP region</b>	<b>A</b>	<b>B–E</b>	<b>F</b>	<b>G–U</b>
GDP region	1	.550	.966**	.918**	1.00**
<b>Pieriga region</b>	<b>GDP region</b>	<b>A</b>	<b>B–E</b>	<b>F</b>	<b>G–U</b>
GDP region	1	.950**	.990**	.439	.999**
<b>Vidzeme region</b>	<b>GDP region</b>	<b>A</b>	<b>B–E</b>	<b>F</b>	<b>G–U</b>
GDP region	1	.883**	.982**	.185	.994**
<b>Kurzeme region</b>	<b>GDP region</b>	<b>A</b>	<b>B–E</b>	<b>F</b>	<b>G–U</b>
GDP region	1	.685*	.986**	.519	.983**
<b>Zemgale region</b>	<b>GDP region</b>	<b>A</b>	<b>B–E</b>	<b>F</b>	<b>G–U</b>
GDP region	1	.949**	.976**	.022	.994**
<b>Latgale region</b>	<b>GDP region</b>	<b>A</b>	<b>B–E</b>	<b>F</b>	<b>G–U</b>
GDP region	1	.459	.739**	.541	.590

\* Correlation is significant at the 0.05 level \*\* Correlation is significant at the 0.01 level

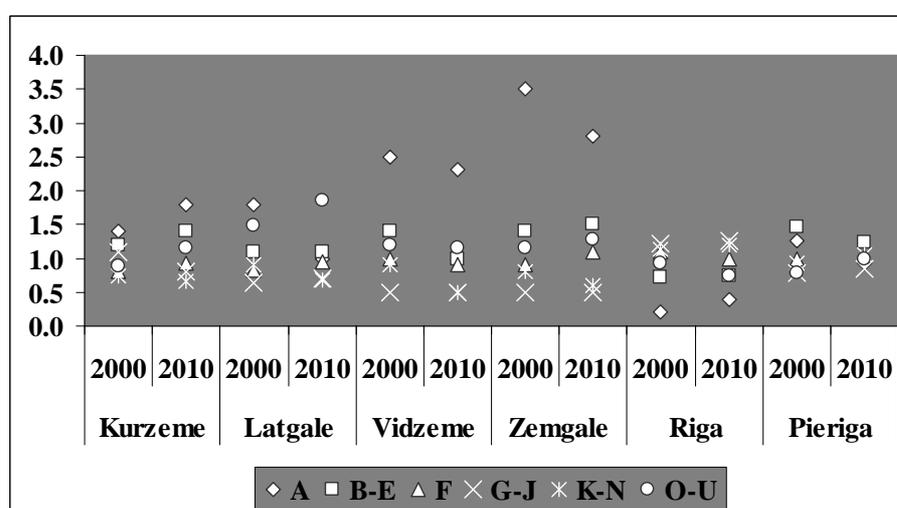
A – Agriculture, forestry and fishing, B–E – Industry and energetic, F – Construction, G–J – Trade, accommodation and food service activities, information and communication, K–N – Financial, insurance, scientific and administrative activities; real estate activities, O–U – Public administration and defence; compulsory social security, education, human health and social work activities, other activities.

**Source:** the authors' calculations based on the data provided by Central Statistical Bureau of Latvia 2013c

The data analyzed indicate that changes in the branch structure of the economy in the Latvian regions have been similar and interrelated, but the economic sectors have different role and importance in regions.

LQ coefficients have been calculated in order to assess the contribution of each sector to the regional development more accurately.

Figure 2 demonstrates that Riga region specializes in “Transportation, storage, information and communication sector” (H, J) which is export-oriented (transit), as well as oriented towards the development and application of high technologies (information and communication); as a result, high value-added is produced within the sector. Pieriga region does not have regional specialization. “Industry and energetic” (B–E) and “Financial, insurance, scientific and administrative activities; real estate activities” (K–N) can be defined as the branches of local importance in Pieriga region. Other Latvian regions specialize in “Agriculture, forestry and fishing” (A), while “Industry and energy sector” (B–E) is positioned, like a sector of local importance.



A – Agriculture, forestry and fishing, B–E – Industry and energetic, F – Construction, G–J – Trade, accommodation and food service activities, information and communication, K–N – Financial, insurance, scientific and administrative activities; real estate activities, O–U – Public administration and defence; compulsory social security, education, human health and social work activities, other activities.

Figure 2. LQ values in the economic sectors in the regions of Latvia in 2000 and 2010

Source: the authors’ calculations based on the data provided by Eurostat 2013c

Taking into account the data analyzed the economic success of Riga region on the one hand and such high regional disparities on the other hand could be explained by the following:

- although Riga region specializes in the non-tradable service sector “Transportation, storage, information and communication” (H, J), this sector is oriented towards export, as well as meets the needs of big domestic market in Riga region (transportation, storage), as well as provides for the development and application of high technologies (information and communication);
- strong and statistically significant relationship between GDP and construction in Riga region provides for the successful implementation of the region’s potential through active use of the European Union’s structural funds;

- the importance of the agriculture sector in the regional economy (except Latgale region) hinder regional competitiveness, because of low value added generated within agriculture sector, as well as great dependence on the European Union's structural funds and limited outlets for both domestic and foreign markets because of high competition level;
- the equal significance of the non-tradable and tradable sectors could negatively affect the country's competitiveness and indicate on absence of clearly defined priorities.

## Conclusion

Considering the differences in the structural composition of the economy in Latvian regions and the kinds of specialization, the research findings allow for the assumption that the branch structure of the economy is an important factor that affects and facilitates the regional differentiation in Latvia. The high regional disparities in Latvia could be explained by the specialization of the regions on labour-intensive branches while only high-technology specialization contributes to the economic growth, which is partially implemented in Riga region. For example, Riga region, which is significantly ahead other regions by the economic development, specializes in the service sector, but on those branches, which are export-oriented, meet the needs of the large domestic market, as well as within which high value added is created, while the other regions specialize in the agriculture sector with relatively low value added as a result of economic activity.



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## *Kopsavilkums*

### ***Par Latvijas ekonomikas struktūru: detalizēts pārskats par valsts specializāciju un reģionālo diferenciāciju***

Reģionāli līdzsvarota ekonomiskā attīstība ir viens no galvenajiem Eiropas Savienības mērķiem, ko nosaka būtiskas reģionālās atšķirības ne tikai starp valstīm, bet arī valstu iekšienē. Latvija ir to valstu vidū, kurās ir vērojama augsta reģionālā diferenciācija. IKP uz vienu iedzīvotāju dispersija Latvijā ir viena no augstākajām Eiropas Savienībā. Dati par ekonomiskās darbības rezultātiem norāda, ka konkurētspējas palielināšanās tiek kavēta tieši valstī esošo reģionālo atšķirību dēļ, kuras lielākoties ir atkarīgas no ekonomikas nozaru struktūras un specializācijas valsts reģionos. Jau ilgāku laika posmu galvaspilsētas reģions pēc ekonomiskās attīstības līmeņa ir līderis, un pārējie valsts reģioni nespēj konkurēt ar galvaspilsētu. Rakstā tiek parādīta ekonomikas nozaru struktūras un specializācijas nozīme augstas reģionālās diferenciācijas veidošanā Latvijā, īpašu uzmanību pievēršot reģionu piensumam valsts IKP veidošanā un ekonomikas nozaru piensumam reģionu IKP veidošanā. Ņemot vērā atšķirības ekonomikas nozaru struktūrā starp Latvijas reģioniem un specializācijas veidus, mūsu pētījuma rezultāti norāda, ka ekonomikas nozaru struktūra ir nozīmīgs faktors, kas ietekmē un veicina augstu reģionālo diferenciāciju Latvijā. Tas galvenokārt ir saistīts ar specializāciju darbietilpīgajās nozarēs, lai gan tikai specializācija augsti tehnoloģiskajās nozarēs veicina ekonomisko izaugsmi, kas ir vērojams Rīgas reģionā.

**Atslēgas vārdi:** *reģionālā diferenciācija, ekonomikas nozaru struktūra, specializācija, Latvija.*

***О структурном составе экономики Латвии:  
детальный обзор специализации и региональной дифференциации***

Регионально сбалансированное экономическое развитие является одной из основных целей Европейского Союза, необходимость которой подкрепляется высокой региональной дифференциацией не только между странами, но и внутри стран. Латвия находится среди тех стран, в которых наблюдается высокая региональная дифференциация. Дисперсия ВВП на душу населения в Латвии одна из самых высоких в Европейском Союзе. Данные о результатах экономической деятельности указывают, что повышение конкурентноспособности задерживается именно существующей в стране высокой региональной дифференциацией, которая в большей мере зависит от отраслевой структуры экономики и специализации в регионах страны. Длительный период времени столичный регион лидировал по уровню экономического развития и другие регионы страны не были готовы конкурировать со столицей. В статье авторы стараются показать значение отраслевой структуры экономики и специализации в процессе формирования высокой региональной дифференциации, уделяя особое внимание вкладу регионов в формирование ВВП страны и вкладу отраслей экономики в формирование ВВП регионов. Учитывая различия в отраслевой структуре экономики между регионами страны и виды специализации, результаты исследования указывают, что отраслевая структура экономики является значимым фактором, который влияет и способствует формированию высокой региональной дифференциации в Латвии. В основном это происходит из-за специализации на трудоемких отраслях, в то время как только специализация на высокотехнологичных отраслях способствует экономическому росту, что можно наблюдать в Рижском регионе.

**Ключевые слова:** *региональная дифференциация, отраслевая структура экономики, специализация, Латвия.*

*Dr., Professor Sergejs Hilkevičs*  
*Mg. Dace Štefenberga*

## **PROBLEMS OF LATVIA'S REGIONAL ECONOMIC DEVELOPMENT AND INNOVATIVE ENTREPRENEURSHIP**

Latvia is a state with small open economy and to increase its prosperity level to Europe's average it is necessary to implement efficient policy of economic development. To control the process of Latvia's integration into the European economic space it is necessary to follow the statistical data, identify the areas, where Latvia is behind the European standards, analyze the reasons of discrepancy, work out recommendations for the improvement of the situation and carry out necessary activities. Global Competitiveness Report defines the factors influencing the competitiveness of a state and the analysis of correlations of GCI correlation with defined pillars gives the possibility to identify which factors have the strongest influence on the country's competitiveness. The systemic approach to innovation and its diffusion is based on the core assumption that innovation and innovative business are related to interaction and close cooperation between different actors involved: business structures, universities, governmental and public institutions.

**JEL Classification:** *O31 – Innovation and Invention: Processes and Incentives; R11 – Regional Economic Activity: Growth, Development, and Change*

### **1. Tendencies of Latvia's regional economic development**

Latvia's progress towards its economic development goal – the achievement of the European average welfare level – is quite contradictory. On the one hand, the average indicators of Latvia's welfare are approaching the respective European indicators: the gross domestic product per capita has increased from 33% of European average in 2002 to 62% in 2013. On the other hand, the internal processes in Latvia are developing in the opposite direction and the disparities between Latvia's most advanced regions and most underdeveloped regions are increasing, not decreasing.

Table 1

#### **Gross domestic product per capita in Latvia's regions, LVL**

	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
<b>Riga</b>	3.855	4.594	5.649	6.971	8.986	10.766	10.181	10.201
<b>Vidzeme</b>	1.646	1.916	2.309	3.033	4.143	4.355	4.065	4.000
<b>Kurzeme</b>	2.412	2.841	3.118	3.741	4.979	5.793	4.907	4.781
<b>Zemgale</b>	1.574	1.662	2.192	2.819	4.154	4.442	3.912	3.995
<b>Latgale</b>	1.418	1.493	1.910	2.329	3.471	3.872	3.429	3.228
<b>Latvia</b>	2.749	3.214	3.938	4.883	6.493	7.386	6.102	6.096

**Source:** [www.csb.gov.lv](http://www.csb.gov.lv)

In order to overcome the negative consequences of the uneven regional economic development, it is required to work out and implement a more effective regional economic development programme, and the basis for such a programme should be found in the analysis of the factors influencing the development of the regions. The question concerning the factors that are crucial for the regional economic development is complicated, but one of the approaches to identify such factors can be related to the analysis of a country's competitiveness index.

## 2. Global Competitiveness Index and development factors

Global Competitiveness Index (Global Competitiveness Report – GCI 2012–2013<sup>1</sup>) covers 144 countries and includes 12 “pillars” to measure a country’s competitiveness: 1) Institutional environment; 2) Infrastructure; 3) Macroeconomic environment; 4) Health and primary education; 5) Higher education and training; 6) Products and services market efficiency; 7) Labour market efficiency; 8) Financial market development; 9) Technological readiness; 10) Market size; 11) Business sophistication; 12) Innovation. The results of pillar weighting for EU27 are presented in Table 2.

Table 2

### EU27 competitiveness pillars

Country /Pillar	GCI	1	2	3	4	5	6
Austria	62,49	5,24	5,64	5,39	6,32	5,38	4,89
Belgium	63,22	5,03	5,65	4,90	6,75	5,75	5,06
Bulgaria	48,99	3,32	3,62	5,13	5,80	4,16	4,08
Cyprus	54,64	4,76	5,01	4,81	6,45	4,70	4,78
Czech Republic	55,55	3,65	4,87	5,17	5,91	4,95	4,58
Denmark	65,71	5,94	5,89	5,39	6,24	5,75	5,06
Estonia	56,8	4,99	4,71	5,71	6,26	5,15	4,74
Finland	66,35	5,98	5,62	5,71	6,76	6,09	4,89
France	62,68	5,00	6,30	4,60	6,37	5,24	4,56
Germany	65,45	5,27	6,35	5,43	6,27	5,73	4,79
Greece	48,53	3,52	4,54	3,29	6,09	4,66	3,88
Hungary	52,69	3,79	4,52	4,77	5,81	4,66	4,32
Ireland	58,16	5,19	5,12	4,01	6,49	5,15	5,10
Italy	54,18	3,61	5,01	4,47	6,28	4,69	4,30
Latvia	50,63	3,87	4,12	4,46	5,94	4,84	4,28
Lithuania	52,72	3,94	4,64	4,71	5,99	5,08	4,25
Luxembourg	62,22	5,67	5,61	6,04	6,26	4,69	5,44
Malta	54,03	4,69	4,52	5,04	6,22	4,81	4,61
Netherlands	65,88	5,61	6,02	5,34	6,54	5,66	5,17
Norway	63,9	5,74	4,95	6,45	6,28	5,49	4,69
Poland	53,75	4,17	3,87	4,71	6,06	4,95	4,36
Portugal	54,49	4,20	5,48	4,21	6,12	4,82	4,27
Romania	48,03	3,49	3,37	4,52	5,72	4,42	3,96
Slovakia	51,86	3,46	4,23	4,92	6,04	4,50	4,36
Slovenia	53,58	4,08	4,81	5,34	6,26	5,16	4,37
Spain	56,3	4,27	5,83	4,60	6,04	4,90	4,23
Sweden	67,78	6,06	5,74	6,08	6,35	5,81	5,21

Source: Schwab, 2012

Table 2. EU27 competitiveness pillars (continued)

Country/Pillar	7	8	9	10	11	12
Austria	4,76	4,64	5,40	4,58	5,46	4,79
Belgium	4,61	4,76	5,80	4,78	5,30	4,83
Bulgaria	4,49	3,99	4,11	3,80	3,55	2,94
Cyprus	4,44	4,83	4,36	2,83	4,19	3,48
Czech Republic	4,62	4,31	4,82	4,48	4,42	3,77
Denmark	5,39	5,01	6,20	4,21	5,53	5,10

<sup>1</sup> Schwab K. (2012) „Global Competitiveness Report 2012-2013.” [http://www3.weforum.org/docs/WEF\_GlobalCompetitivenessReport\_2012-13.pdf (15.09.2013.)]

Estonia	4,92	4,51	4,95	2,89	4,16	3,81
Finland	4,94	5,34	5,75	4,15	5,40	5,72
France	4,38	5,00	5,63	5,74	5,14	4,72
Germany	4,41	4,54	5,61	6,00	5,66	5,39
Greece	3,63	3,52	4,21	4,42	3,79	2,98
Hungary	4,38	4,15	4,55	4,24	3,88	3,62
Ireland	4,90	3,44	5,34	4,12	4,93	4,37
Italy	3,77	3,73	4,34	5,62	4,85	3,51
Latvia	4,59	4,17	4,26	3,05	3,84	3,21
Lithuania	4,53	3,86	4,70	3,46	4,13	3,43
Luxembourg	4,63	5,34	6,00	3,04	4,98	4,52
Malta	3,99	5,11	5,05	2,33	4,28	3,38
Netherlands	4,84	4,86	6,13	5,10	5,58	5,03
Norway	4,89	5,46	6,08	4,30	5,04	4,53
Poland	4,48	4,6	4,18	5,08	4,06	3,23
Portugal	3,79	3,98	5,31	4,35	4,19	3,77
Romania	4,10	3,91	3,76	4,39	3,48	2,91
Slovakia	4,47	4,44	4,54	3,99	4	2,91
Slovenia	4,00	3,62	4,76	3,44	4,19	3,55
Spain	3,84	4,14	4,95	5,44	4,51	3,55
Sweden	4,82	5,24	6,29	4,59	5,83	5,76

Source: Schwab, 2012

According to GCI classification, all global economies are divided into five different stages of development: 1) factor driven economy; 2) transition from factor driven to efficiency driven economy; 3) efficiency driven economy; 4) transition from efficiency driven to innovation driven economy; 5) innovation economy. According to this classification, Latvia is at the 4<sup>th</sup> stage.

The analysis of the interrelations of a country's competitiveness index with the economic development pillars makes it possible to identify the factors having the greatest influence on a country's competitiveness. Table 3 presents the correlation coefficients of GCI  $x(i)$  and pillars  $y(i)$  calculated for 144 countries by the following formula:

$$Correl(X, Y) = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sqrt{\sum (x - \bar{x})^2 \sum (y - \bar{y})^2}} \quad (1)$$

Table 3

**Correlation coefficients of GCI index and 12 pillars for 144 countries**

GCI	1	2	3	4	5	6
1,00	0,85	0,94	0,57	0,81	0,93	0,88
0,85	1,00	0,80	0,48	0,59	0,73	0,87
0,94	0,80	1,00	0,49	0,80	0,90	0,79
0,57	0,48	0,49	1,00	0,41	0,42	0,49
0,81	0,59	0,80	0,41	1,00	0,87	0,63
0,93	0,73	0,90	0,42	0,87	1,00	0,75
0,88	0,87	0,79	0,49	0,63	0,75	1,00
0,63	0,68	0,53	0,35	0,37	0,52	0,67
0,82	0,78	0,72	0,41	0,56	0,70	0,85
0,93	0,79	0,92	0,44	0,78	0,92	0,79
0,61	0,26	0,53	0,32	0,44	0,53	0,38
0,94	0,81	0,87	0,44	0,71	0,85	0,86
0,91	0,81	0,82	0,43	0,63	0,81	0,78

Source: the authors' calculations

**Table 3. Correlation coefficients of GCI index and 12 pillars for 144 countries (continued)**

<b>GCI</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
1,00	0,63	0,82	0,93	0,61	0,94	0,91
0,85	0,68	0,78	0,79	0,26	0,81	0,81
0,94	0,53	0,72	0,92	0,53	0,87	0,82
0,57	0,35	0,41	0,44	0,32	0,44	0,43
0,81	0,37	0,56	0,78	0,44	0,71	0,63
0,93	0,52	0,70	0,92	0,53	0,85	0,81
0,88	0,67	0,85	0,79	0,38	0,86	0,78
0,63	1,00	0,57	0,57	0,14	0,56	0,62
0,82	0,57	1,00	0,72	0,40	0,80	0,72
0,93	0,57	0,72	1,00	0,47	0,88	0,86
0,61	0,14	0,40	0,47	1,00	0,60	0,56
0,94	0,56	0,80	0,88	0,60	1,00	0,92
0,91	0,62	0,72	0,86	0,56	0,92	1,00

**Source:** the authors' calculations

In the global scale, Infrastructure (0.94) and Business sophistication (0.94), Technological readiness (0.93) and Higher education (0.93), Innovation (0.91) have the highest value of the correlation coefficients with the competitiveness index. Macroeconomic environment (0.57) and Labour market efficiency (0.63) have the lowest value of the correlation coefficients with the competitiveness index. It can be seen in the mutual correlation table that the pillars best correlating with the competitiveness index also have a good correlation among themselves, which is not observed for the other pillars thus making it possible to state that the pillars 2, 5, 9, 11 and 12 create a group of mutually interrelated factors defining the level of a country's competitiveness.

The situation in the European countries differs from the situation in the world in general – Table 4 presents the respective correlation coefficients of the European Union member states.

The main differences are related, firstly, to the fact that the correlation coefficients with GCI for the 2<sup>nd</sup> pillar (Infrastructure) and the 5<sup>th</sup> pillar (Higher education) have decreased from 0.94 to 0.84 and from 0.93 to 0.88 accordingly, which can be explained by the “saturation” effect – infrastructure and education are well developed and their minor changes have no major effect on competitiveness. Secondly, the correlation coefficient with GCI for the 1<sup>st</sup> pillar (Institutional environment) has increased from 0.85 to 0.90, which can be explained by the greater importance of institutional environment in the advanced economies rather than in the developing ones. Thirdly, and this is the most important, the correlation coefficient with GCI for the 12<sup>th</sup> pillar (Innovation) has increased from 0.91 to 0.97, which indicates that in the advanced European economies the statistical coherence between competitiveness and innovation is stronger than the average in the world. The value of GCI/Innovation correlation coefficient 0.97 is higher than any other pillar correlation coefficient with GCI and it means that innovations have a particularly great significance in ensuring the competitiveness of the advanced countries. It should be emphasised that the low ranking of Latvia's competitiveness index is directly affected by the low innovation ranking – the 68<sup>th</sup> position among 144 countries, wherewith innovation development plays a crucial role in ensuring national competitiveness. It is required to take into account the major differences between innovative entrepreneurship and non-innovative entrepreneurship, when elaborating innovation development policies at a regional level.

### 3. Specific peculiarities of innovative entrepreneurship

The regional innovation system development theory is basically built on the empiric conclusions drawn by Andersson and Karlsson in 2004<sup>2</sup>, stating that innovations along with innovative entrepreneurship have increasing tendencies to localize. It is based on the consideration that the three main components within the innovation process – universities or scientific institutions as knowledge centres, technology transfer centres, offices as mediators between academic and business environment, and business structures and entrepreneurs as a driving force of new products and services in the market, according to Cooke (2001) – should have intensive cooperation among themselves in order to achieve the set goals<sup>3</sup>.

Table 4

**Correlation coefficients of GCI index and 12 pillars for EU27 countries**

<b>GCI</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
1,00	0,93	0,84	0,64	0,73	0,88	0,84
0,93	1,00	0,72	0,64	0,74	0,81	0,87
0,84	0,72	1,00	0,29	0,67	0,71	0,65
0,64	0,64	0,29	1,00	0,28	0,48	0,60
0,73	0,74	0,67	0,28	1,00	0,73	0,72
0,88	0,81	0,71	0,48	0,73	1,00	0,65
0,84	0,87	0,65	0,60	0,72	0,65	1,00
0,61	0,66	0,24	0,60	0,35	0,57	0,69
0,71	0,75	0,43	0,74	0,46	0,52	0,65
0,94	0,90	0,82	0,60	0,66	0,80	0,83
0,33	0,05	0,44	-0,14	0,11	0,30	-0,04
0,96	0,85	0,86	0,51	0,74	0,85	0,80
0,97	0,90	0,82	0,56	0,71	0,90	0,80

Source: the authors' calculations

**Table 4. Correlation coefficients of GCI index and 12 pillars for EU27 countries (continued)**

<b>GCI</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
1,00	0,61	0,71	0,94	0,33	0,96	0,97
0,93	0,66	0,75	0,90	0,05	0,85	0,90
0,84	0,24	0,43	0,82	0,44	0,86	0,82
0,64	0,60	0,74	0,60	-0,14	0,51	0,56
0,73	0,35	0,46	0,66	0,11	0,74	0,71
0,88	0,57	0,52	0,80	0,30	0,85	0,90
0,84	0,69	0,65	0,83	-0,04	0,80	0,80
0,61	1,00	0,54	0,56	-0,13	0,51	0,59
0,71	0,54	1,00	0,67	-0,06	0,58	0,62
0,94	0,56	0,67	1,00	0,19	0,89	0,90
0,33	-0,13	-0,06	0,19	1,00	0,43	0,34
0,96	0,51	0,58	0,89	0,43	1,00	0,94
0,97	0,59	0,62	0,90	0,34	0,94	1,00

Source: the authors' calculations

<sup>2</sup> Andersson, M., Karlsson, C. (2004) „Regional Innovation Systems in Small & Medium Sized regions A critical Review & Assessment.” *Working Paper Series in Economics and Institutions of Innovation 10*, Royal Institute of Technology. [<http://www.infra.kth.se/cesis/document/WP10.pdf> (15.09.2013.)]

<sup>3</sup> Cooke, P. (2001) „Regional Innovation Systems, Clusters and Knowledge Economy’ Industrial and Corporate Change.” *Oxford University Press, vol.10(4):945-74*

The need for intensive communication as well as the orientation towards the most developed national economy sectors fosters the formation of innovative clusters. The localization process of innovative entrepreneurship is closely linked to “non-innovative” or standard entrepreneurship globalisation process significantly influenced by the vanishing of the European Union’s borders to ensure free movement of capital, labour force, physical resources as well as goods and services.

#### 4. Latvia’ alignment with the European innovative landscape

Joining the European economic and innovative landscape, Latvia also has to focus on the achievement of the common objectives of Europe – European Commission has elaborated the strategy „*Europe 2020*”<sup>4</sup> with the headline targets set up to accept the following priorities:

1. Smart growth through effective investments in education, research and innovation;
2. Sustainable growth promoting more effective use of resources and development of low-carbon and competitive economy;
3. Inclusive growth with a strong emphasis on job creation and social and territorial cohesion.

The strategy is focused on five headline targets in the areas of employment, innovation, education, poverty reduction and climate change/energy. The three main priorities of the strategy are also emphasised in the edition of regional policy of European Commission “*Guide to Research and Innovation Strategies for Smart Specialisations*” (RIS 3). The document ensures the elaboration of the so-called *Smart Specialisation* – it identifies the key strategic industry in each region and focuses on the resources of research, innovation and investments to this specific strategy. For instance, Scotland works in the area of wind energy, renewable energy, while Finland specializes in *cleantech*. This strategy is victorious in Finland and it is successfully developing. In 2012, the Finnish government accepted the strategic programme in the area of *cleantech* with the aim to establish *cleantech* as one of the key priorities of Finland’s economic policy. The target is to achieve the creation of 40000 work places in the sector of *cleantech* by 2020 and to double the total turnover from 20 billion EUR to 40 in 2018. In the period of two years since 2011, when Finland had more than 2000 enterprises working in the sector of *cleantech*, the *cleantech* export has reached 12 billion EUR which makes 20% of the total export in Finland.

EC mentions Noord-Brabant region in the Netherlands as a success story as it is regarded as one of the most advanced regions in Europe in the field of innovation. This region is located in the Eindhoven/Brainport area and is ranked as Europe’s third leading technological region. The region is based on traditional but very competitive industries (high-tech, logistics, and design), the newly developed operational programmes will promote food production, life/health science development, biomass economy, development of high-tech elaboration system and materials as well as logistics. The key priority of the region is the cross border cooperation. The “Tripple Helix” cooperation model is especially well developed in the region – governmental institutions, business sector, and knowledge based institutions – scientific institutions, higher education institutions. The implementation of the “Triple Helix” model has been expanded in the region by involving new economic partners, such as, for instance, hospitals, transport companies, energy companies and civil society groups<sup>5</sup>.

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<sup>4</sup> European Commission (2013) “Europe 2020” [[http://ec.europa.eu/europe2020/europe-2020-ina-nutshell/priorities/index\\_en.htm](http://ec.europa.eu/europe2020/europe-2020-ina-nutshell/priorities/index_en.htm) 15.09.2013].

<sup>5</sup> European Commission (2013) “Eco-innovation. EU regions spearhead moves towards the green economy”. *Panorama Inforegio*. Autumn 2013, Nr. 47 [[http://ec.europa.eu/regional\\_policy/sources/docgener/panorama/pdf/mag47/mag47\\_en.pdf](http://ec.europa.eu/regional_policy/sources/docgener/panorama/pdf/mag47/mag47_en.pdf) (15.09.2013)].

Such examples convincingly demonstrate that the regional economic and innovation strategies in Europe are based on the use of competitive advantages and more effective funding of every region. In Latvia, meanwhile, the issue of regional specialization in the area of innovation is in the initial discussion stage, and the studies on possible regional specialization are made only for some individual branches – for instance, it is clarified that the development of wind energy is appropriate for the coastal zone in Kurzeme. A more detailed SWOT analysis to define the competitive advantages of Latvia's regions has not been done yet. It is necessary to stress that at present the challenges of regional development differ from those before the accession to the European Union, because Europe has the rapidly changing and very dynamic environment.

The guidelines to regulate innovation and entrepreneurship in Latvia were incorporated in the *Entrepreneurship Competitiveness and Innovation Promotion Programme for 2007–2013*. The aim of the document was to provide the further stable development of Latvian economy by creating “the preconditions for the transition from the model of economy based mostly on the utilization of low-qualified labour force and of products of low added value to the model of innovative (knowledge-based) development”<sup>6</sup>. Now it is clear that the objectives set in the guidelines have not been achieved. At present, a new document is being developed for the coming planning period – *draft Guidelines on Science, Technological Development and Innovations for 2014–2020* with five main action directions in the areas of science, technology and innovation for the next six years:

1. Renewal and development of the potential of science, technologies and innovations, strengthening of the sector's competitiveness;
2. Linking science, technologies and innovations to the development needs of the society and the national economy;
3. Smart specialization;
4. Effective management of science, technologies and innovations;
5. Promotion of society awareness, popularization of science and innovation.

Not the least is the role of the national economy and entrepreneurship to be defined for the next planning period, incorporated in the *draft Guidelines on National Industrial Policy 2014–2020*<sup>7</sup>, though it should be emphasised that the connectivity and the mutual comprehension of these two documents are required, even if the documents have the highest quality. The production of exportable goods and services is emphasised as the main opportunity for Latvian enterprises to take the lead in the global market.

Nevertheless it is noteworthy that it is not enough just to formulate the objectives in order to define exact results of action directions and further on work to achieve the set objectives and results; every involved stakeholder should clearly understand his own role and all the involved stakeholders should work together – both, scientists as developers of new ideas, and public administration and state institutions as policy makers, and businesses as involved stakeholders from the private sector who receive investments and transform them into competitive goods or services, all the above-mentioned make it possible to achieve the best results. It is important to define the future needs of the national economy for entrepreneurs – what innovations and in what sectors should be developed.

Planning of the regional policy in the European Union includes its 28 member-states and their 270 regions. Latvia in the European context is one NUTS 2 region, although it does not bar Latvia from working out a detailed policy planning documentation for the development of all its regions, because an even development of all the regions can ensure the

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<sup>6</sup> Valsts Kanceleja (2007) “Komerccdarbības konkurētspējas un inovācijas veicināšanas programma 2007.–2013. gadam” [<http://polsis.mk.gov.lv/view.do?id=2282> (15.09.2013)].

<sup>7</sup> Ekonomikas Ministrija (2013) “Nacionālās industriālās politikas pamatnostādnes 2014.–2020. gadam.” [[www.em.gov.lv/images/modules/.../EMPam\\_15052013\\_NIP\\_inf.docx](http://www.em.gov.lv/images/modules/.../EMPam_15052013_NIP_inf.docx) (15.09.2013)].

overall national development. At the moment, *draft Guidelines on Regional Policy for 2014–2020* are being elaborated. Ensuring entrepreneurship in the regions in order to prevent brain-drain of qualified human resources – gateway to success for promotion of sustainable growth – from the regions to Riga and further on to other countries is among the main challenges.

A number of other documents as the regulations of European Commission promote the development of innovations in education, science, business. One of such documents is the guidelines for the research and development programme “*Horizon 2020*”, approved by European Commission in the middle of 2013, which envisages funding of more than 70 billion EUR to science and innovation within the period 2014 – 2020.

## 5. Conclusions

Summarizing the discussion above, it can be concluded that the national economic growth all in all depends directly on the growth of all the regions, and at present it is especially important to define equal development of the regions as the priority of the national development. The development of innovative entrepreneurship in the regions is the most effective tool to ensure the regional economic development, but it demands a special attention to be paid by policy makers and implementers because of additional risk factors. The excellence in science, innovation, entrepreneurship and development can be reached only provided that all the involved stakeholders mutually interact and are accountable for the tasks to be done.

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European Commission (2013) “Eco-innovation. EU regions spearhead moves towards the green economy”. *Panorama Inforegio*. Autumn 2013, Nr. 47 [[http://ec.europa.eu/regional\\_policy/sources/docgener/panorama/pdf/mag47/mag47\\_en.pdf](http://ec.europa.eu/regional_policy/sources/docgener/panorama/pdf/mag47/mag47_en.pdf) (15.09.2013)].

European Commission (2013) “Europe 2020” [[http://ec.europa.eu/europe2020/europe-2020-in-a-nutshell/priorities/index\\_en.htm](http://ec.europa.eu/europe2020/europe-2020-in-a-nutshell/priorities/index_en.htm) 15.09.2013)].

Schwab, K. (2012) “Global Competitiveness Report 2012–2013” [[http://www3.weforum.org/docs/WEF\\_GlobalCompetitivenessReport\\_2012-13.pdf](http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2012-13.pdf) (15.09.2013)].

Valsts Kanceleja (2007) “Komercedarbības konkurētspējas un inovācijas veicināšanas programma 2007.–2013. gadam” [<http://polsis.mk.gov.lv/view.do?id=2282> (15.09.2013)].

## *Kopsavilkums*

### ***Reģionālās attīstības problēmas un inovatīvā uzņēmējdarbība Latvijā***

Latvija ir valsts ar mazu atvērtu ekonomiku un, lai paaugstinātu tās attīstības un konkurētspējas līmeni līdz vidējam Eiropas līmenim, ir jāizstrādā un jārealizē efektīva ekonomikas attīstības politika. Lai pārraudzītu Latvijas integrācijas procesu Eiropas ekonomiskajā telpā, ir nepieciešams sekot statistikas datiem, identificēt jomas, kurās Latvija atpaliek no vidējiem Eiropas rādītājiem, analizēt iemeslus, izstrādāt rekomendācijas situācijas uzlabošanai un realizēt nepieciešamās aktivitātes. Globālās konkurētspējas ziņojums definē faktorus, kas ietekmē valsts konkurētspēju, bet globālās konkurētspēja indeksa faktoru korleācijas analīze identificē faktorus, kuriem ir visspēcīgākā ietekme uz valsts konkurētspēju. Lai attīstītos inovācijas un inovatīva uzņēmējdarbība, ir jāveido cieša sadarbība starp dažādām iesaistītajām institūcijām: biznesa struktūrām, universitātēm un valsts iestādēm.

## *Резюме*

### ***Проблемы регионального развития и инновационная предпринимательская деятельность в Латвии***

Латвия является страной, экономика которой принадлежит к классу так называемых малых открытых экономик. Экономике такого типа очень чувствительны к внешним воздействиям, поэтому для поддержания конкурентоспособности такой экономики и достижения среднего европейского уровня благосостояния, страна должна проводить очень эффективную политику экономического развития. Для отслеживания хода интеграции Латвии в европейское экономическое пространство необходимо непрерывное сравнение Латвийских и среднеевропейских статистических показателей экономического развития, определение областей, в которых Латвия отстает от средних показателей, анализ причин отставания, выработка рекомендаций по улучшению ситуации и реализация соответствующих мероприятий. В настоящей работе анализ конкурентоспособности Латвийской экономики проводится на основе исследования корреляционных зависимостей между составными частями глобального индекса конкурентоспособности. Показано, что на уровне национальных экономик именно уровень инновационного развития коррелирует с конкурентоспособностью наиболее сильно. Ключевым фактором, определяющим уровень развития инноваций, является согласованность взаимодействия государственных структур, академической среды и предпринимательства.

## **SOURCES FOR THE INVESTMENTS IN THE DEVELOPMENT OF RAILWAY TRANSPORT: EXPERIENCE OF UKRAINE**

The purpose of the study is to examine and organize the potentially available sources of investment in the development of railway transport of Ukraine, taking into account the international experience and to provide concrete and practical recommendations to diversify the sources of financing of investment in the rail infrastructure. The article provides the comparative analysis of the financing of railway infrastructure and the renovation of rolling stock in some foreign countries and Ukraine. The attention is paid to the experience of Germany and China: practical approaches to financing and distribution of funding sources are explored. Potentially available sources of investment in the development of railway transport of Ukraine, taking into account international experience are studied and systematized. Each financial instrument is considered from the viewpoint of its practical use in Ukraine. Particular attention is paid to such financial instruments as the securitization of assets, namely the issue of infrastructure bonds and Eurobonds. The specific practical recommendations for the diversification of sources of financing investments in rail transport at the present stage of reforming the railway transport of Ukraine are given.

**Key words:** *investment sources, the development of rail transport, the diversification of sources*

**JEL Classification:** *L91 – Transportation: General; L92 – Railroads and Other Surface Transportation; G11 – Portfolio Choice; Investment Decisions*

**Posing the problem.** The problem of the non-correspondence of the development level of the railway transport and its infrastructure to the demands of the economy recently have aggravated considerably. Modernization and development of the railway transport require considerable investments whose preparation and realization are especially complex. Although the main problem is the access to investment resources (budget funds, access to foreign resources, the possibility to start charging for the use of the railway infrastructure, the possibility to attract private capital), the analysis shows that the situation may improve through diversifying the sources for investing in the development of the railway transport.

**Results obtained by other researchers.** Ukrainian and foreign scientific literature provides a variety of approaches to financing railway transport, stated in the works by Y. M. Tsvetov, M. Y. Tsvetov, M. V. Makarenko (2007) Y. M. Sych, V. Ilchuk (2006), N. I. Bogomolova (2012), V. L. Dikan, S. P. Loza (2006), S. A. Starykh, T. S. Sulakshin (2012) and others. However, the issue of diversifying potentially accessible sources of funding for the needs of the railway transport has not been revealed completely.

**The research objective** is learning and systematizing *potentially accessible sources for investing* in the development of Ukraine's railway transport, taking into account the foreign experience and providing specific practical recommendations on diversifying the sources of financing investments in the railway transport.

**Research results.** In 2004–2008, one could observe a tendency to increase the share of infrastructural investments in total investments in the development of the railway transport.

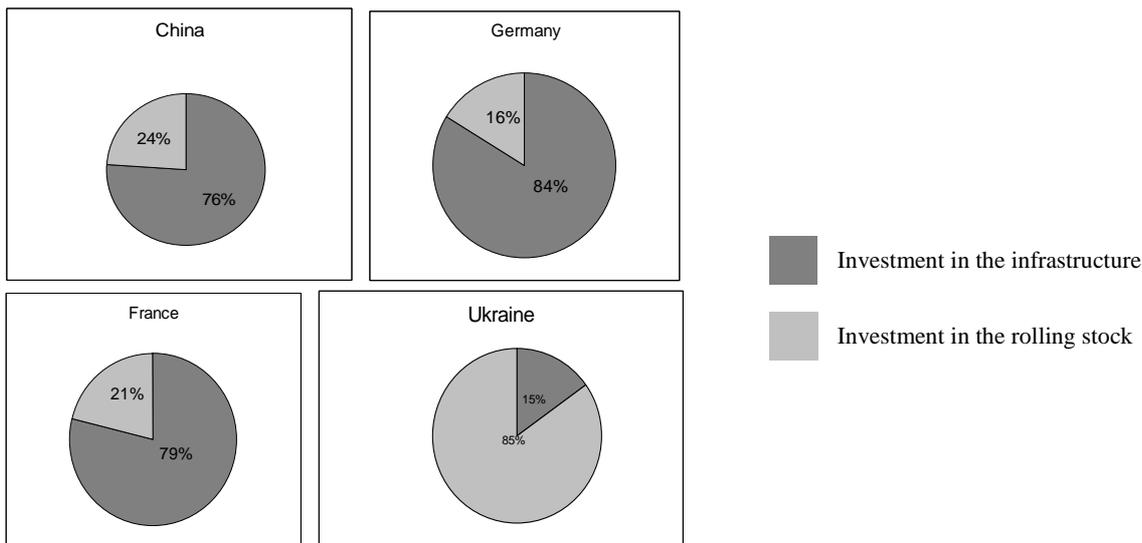


Figure. 1 Structure of investment in railway infrastructure in 2008, %

Source: Старых 2012, Statistical Bulletin 2011

At the same time, the proportions of investments in Ukraine's rolling stock and infrastructure are quite opposite: 85% of total investments are directed to ensure the functioning of the railway transport (according to the data of Ukraine's State Statistical Service for 2008) and only 15% to the renewal and modernization of the infrastructure.

Efficient functioning of the system of railway transport is one of the main tasks of China's government so the state takes an active part in the financing of the railway, and, taking into account the local government, its share is the highest one and amounts to 35% (see Figure 2).

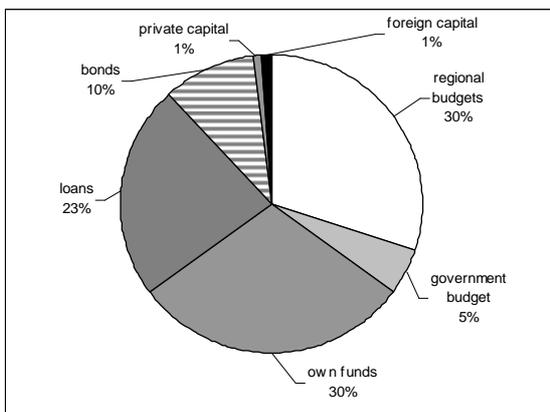


Figure 2. Structure of investments in Chinese railway in 2007–2009, %

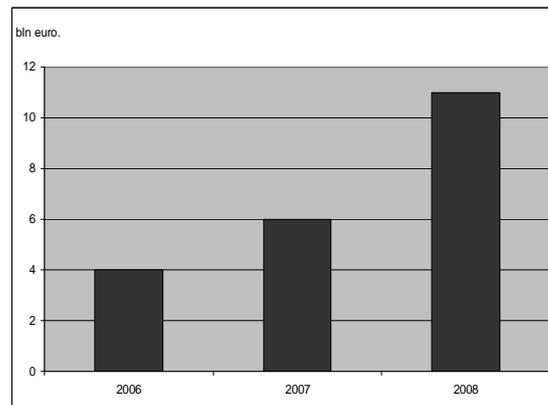


Figure 3. Issue of railway infrastructure bonds by the Ministry of railways in China in 2006–2008, bln. euros

Source: Старых 2012

A regulatory instrument for attracting the funds of private and institutional investors in China's railway transport is the bonds or infrastructural investments (see Figure 3). In 2006–2008, at the expense of bond issue the government attracted 21 bln. euros.

In Germany, financing the railway transport is mainly realized at the expense of the state and regional budgets, as well as at the expense of the funds of the companies of «Deutsche Bahn» group. It is important that the expenditures on the road infrastructure (railways, motor roads and waterways) are subsidized in Germany also at the expense of road fee from commercial vehicles. The amount of the subsidy for the railway transport at the expense of that source, in 2009, exceeded 1.1 bln. euros (see Figure 4).

The state support is especially important during economic recessions. Thus, while before the crisis the volumes of the state financing of China’s railways amounted to 22–26 bln. euros yearly, in 2008 they grew to 43 bln. euro, and, in 2009–2010 even greater measures were taken to support the railways and encouraging anti-crisis package was introduced in the amount of 65 bln. euros yearly, which total public expenditures on the railway transport grew to 91 bln. euro (Старых, 2012).

In Europe, even under the global financial crisis, financing the railways development was a priority and the state support was kept at the pre-crisis level. Thus, in Germany, in 2009, as an additional support of the railway transport, there was also an anti-crisis encouraging package in the amount of 1.4 bln euros. In France, in 2009–2010, a similar encouraging package exceeded 1.4 bln euros, and in Spain in 2009– 140 mln euros (Старых, 2012).

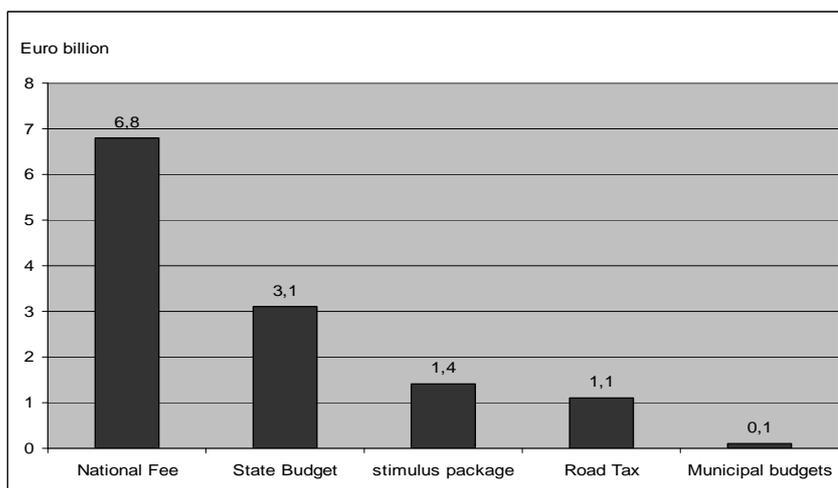


Figure. 4 Sources of public investment in the railways of Germany in 2009, in billions of euro

Source: Старых 2012

Thus the investments in the railway infrastructure are one of the key instruments of economic stabilization, which is proven by the economic policy of many countries during the crisis. At the same time, a dynamic growth of the investments in the development of the railway transport including the increased state subsidies is one of the most important conditions of economic growth. According to the data by the company SCI Verkehr GmbH, the government’s role in the development of the railways has been increased globally, and, from 2004 to 2008, the sector’s state financing almost doubled: from 70 to 133 bln. euros amounting to 30% of total investments in the development of the world’s railways (SCI Verkehr Berlin, 2011).

**Financing the renewal of the railway infrastructure and rolling stock in Ukraine.** Financing the renewal of the railway infrastructure and rolling stock in Ukraine, in 2001–2010, in most cases, was reduced to ensuring the support of its current functioning. To the

renewal and modernization of fixed assets in the railway transport, it is necessary to assign over 26 bln. UAN yearly, out of which amount Ukrzaliznytsia's own funds only allowed to allocate about 7–10 bln. UAN yearly in the best years (2007 and 2008) and only 5–7 bln. UAN in 2009–2010, which is only a third of the necessary amount. According to the official data, the investments in the development of the railway transport (in the operation of the railway transport and functioning of the railway infrastructure together) in 2006–2010, averaged 3.8% of the total capital investments of Ukraine's economy per year, which is much lower than the threshold values of 10–11%, based on the state's security considerations (see Table 1) (Державна служба статистики України, 2010).

Table 1

**Capital investments in fixed assets of rail transport  
(operations and infrastructure) in 2006–2011**

Index	Used investments in fixed assets			Including: from the state budget	
	thousand UAH	% to previous year	% of total investment in fixed assets	thousand UAH.	% of total investment in fixed assets by economic activity
<b>Year</b>	<b>2006</b>				
Operating railway activity	3463091	118,0	2,8	–	–
Operating activities of railway infrastructure	374307		0,3	14668	3,9
<b>Total rail</b>	<b>3837398</b>		<b>3,1</b>		
<b>Year</b>	<b>2007</b>				
Operating railway activity	6683487	165,9	3,5	0	0
Operating activities of railway infrastructure	998546	431,8	0,5	–	–
<b>Total rail</b>	<b>7682033</b>		<b>4,0</b>		
<b>Year</b>	<b>2008</b>				
Operating railway activity	8549301	104,0	3,7	*	*
Operating activities of railway infrastructure	1555164	135,5	0,7	*	*
<b>Total rail</b>	<b>10104465</b>		<b>4,4</b>		
<b>Year</b>	<b>2009</b>				
Operating railway activity	3597346	35,9	2,4	*	*
Operating activities of railway infrastructure	1200022	64,7	0,8	5521	0,5
<b>Total rail</b>	<b>4797368</b>		<b>3,2</b>		
<b>Year</b>	<b>2010</b>				
Operating railway activity	5734848	143,5	3,4	–	
Operating activities of railway infrastructure	1841307	129,3	1,1	*	
<b>Total rail</b>	<b>7576155</b>		<b>4,5</b>		
<b>Year</b>	<b>2011</b>				
Operating railway activity	6458496	93,3	2,7	*	*
Operating activities of railway infrastructure	1496717	72,5	0,6	8864	0,8
<b>Total rail</b>	<b>7955213</b>		<b>3,7</b>		

Source: Статистичний бюлетень “Капітальні інвестиції в Україні” 2008, 2009, 2010, 2011

Considering the indicators of *public expenditures* on the development of the railway transport, one can see either the lack of data or very insignificant funds on the development of Ukraine's railway transport: in 2006, the amount directed to the functioning of the railway infrastructure was 14.6 mln. UAN or 3.9% of all the investments in the sector of transport and communications, and in 2009 – 5.5 mln. UAN or 0.5% respectively.

Table 2

**Projects in the sector “transport” for the period 2009–2013, by source of funding**

Projects in the sector “transport”	Number of Projects	Total project cost, million UAN	including the sources of funding:			
			borrowed funds % of total	own funds % of total	local budget % of total	State Budget % of total
Total	62	171 545	<u>140 472</u> 81,9	<u>26 730</u> 15,6	<u>39</u> 0,02	<u>4 304</u> 2,5
of these projects: aircraft	21	59 637,9	<u>55 403,0</u> 92,9	<u>1 397,2</u> 2,3	<u>38,6</u> 0,1	<u>2 799,1</u> 4,7
maritime transport	21	29 282,6	<u>24 063,0</u> 82,2	<u>5 219,6</u> 17,8	–	–
railway transport	13	27 525,8	<u>10 294,4</u> 37,4	<u>16 548,2</u> 60,1	–	<u>683,2</u> 2,5
road transport	3	866,3	<u>30,3</u> 3,5	<u>23,0</u> 2,7	–	<u>813</u> 93,8
including in preparation for Euro-2012	24	23 895	<u>6 320</u> 26,4	<u>14 870</u> 62,2	<u>38</u> 0,2	<u>2 667</u> 11,2

Source: the author's calculation based on the data of Ministry of Infrastructure Ukraine 2011

It should be mentioned that an impetus for reviving infrastructural projects on the railway transport was such a powerful factor as Ukraine's holding UEFA Euro 2012 Final. Thus, for 2009–2013, according to the data by the Ministry of Infrastructure, 13 investment projects were planned in the railway sector totally worth 21.1 bln. UAN, out of which, 8 projects were part of the preparation for the Final (see Table 2).

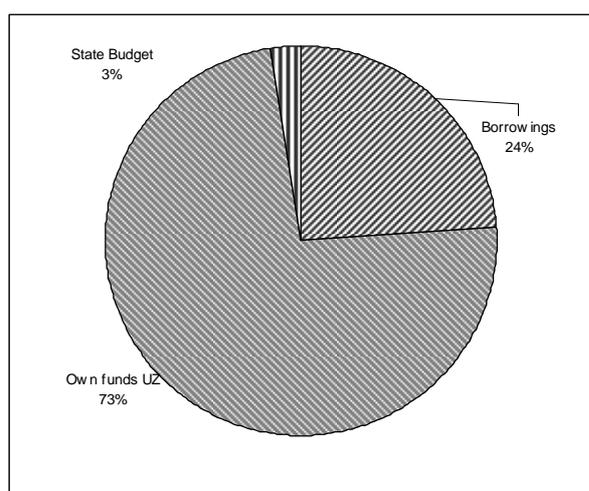


Figure 5. The structure of investment in railway projects in Ukraine 2009–2012, %

Source: own calculation based on data of Ministry of Infrastructure of Ukraine (2011)

The projects were executed mainly at the expense of Ukrzaliznytsia's own funds (20,8 bln. UAN or 73%), attracted funds in the amount of 6.4 bln. UAN (taking into account the interest) or 24%, and the funds from the state budget 0.6 bln. UAN or 3% (see Figure 5).

In the author's opinion, the attraction of mainly external sources of investments makes a company dependent on its external credits, for the servicing of which the regional branches of the railways had to open new credit lines in other banks, mainly in the Russian Federation. Thus, since early 2012 the regional railways, based on the results of the tenders, concluded agreements for taking long-term credits worth 39 mln. USD at Private Joint Stock Company "Dochiniy Bank ZberbankuRosii" (Subsidiary of the Saving Bank of Russia), which was reported in "VisnykDerzhavnykhZakupivel" (Bulletin of State Purchases). Subsidiary "OdeskaZaliznytsia" in order to fulfill the program of capital investments and *cover the existing loans*, opened, for three years, two credit lines each worth 7 mln. USD at 10.65% annual interest.

Total amount of servicing the credits will be 4.47 mln. USD. The subsidiary "Prydniprovskya Zaliznytsia", for similar purposes, opened two three-year credit lines totally worth 25 mln. USD at 10.65% annual interest. The total amount of servicing the credits will be 7.39 mln. USD. The participants of the above mentioned tenders were exclusively banks belonging to Russian companies: Private Joint Stock Company "Alfa Bank", Private Joint Stock Company "VTB Bank", Private Joint Stock Company "AktSIONERNYI KOMERTSIYNYI PROMYSLOVO-INVESTYTSIYNYI BANK" (Joint Stock Commercial Industrial and Investment Bank) and Private Joint Stock Company "Dochiniy Bank ZberbankuRosii" (Subsidiary of the Saving Bank of Russia). At the same time, no Ukrainian or European banks took part in the tenders (Тиждень. ua, 2012).

Learning the global experience of source diversification in investing railway projects allows systematizing them and analyzing their real use in Ukraine (see Table 3). Thus, the list of possible sources *to be attracted as investment resources in the railway transport* is as follows:

- I. *Funds of central and local budgets accumulated at the expense of: general state taxes and fees; special taxes (for example, tax on the use of the railway infrastructure); fees for the use of the facilities of the transport infrastructure; fines charged for the infringement of previously set rules and procedures; insurance premiums partly spent on reducing the probability of insurance risks on the transport infrastructure.*
- II. *The funds of the railways and their branches accumulated from freight payments, which is the base for the depreciation fund and cash accumulation in the railway branches.*
- III. *Credits granted by the banks and other financial institutions, divided by external and internal ones, the main of which are bank investment credits; syndicated or consortium based credits, project and mezzanine financing, which is a type of investment credit.*
- IV. *Bond loans: Emission of securities in the form of corporate bonds, Euro bonds, infrastructural bonds for specific projects, and bill loans.*
- V. *Capital corporatization.*
- VI. *Leasing.*
- VII. *Private-public partnership, which is a mechanism for attracting investment funds. The main purposes of its use on the transport is solving financial problems and the modernization of the transport infrastructure, state management and raising the sector's quality.*

Table 3

No	Possible investment sources	Short characteristic	The use in the railway transport
I.	<b>Funds of central and local budgets accumulated from the following sources</b>	Providing free budget funding for important infrastructural facilities	Purpose oriented government credits, privileged government loans, tax credits, grants, subsidies or compensations of part of banking interests on granted credits.
A)	general state taxes and fees	For example, corporate tax	In accordance with Tax Code of Ukraine, which came in force on 1 January 2011 (Vidomosti Verkhovniyi Rady Ukrainy (Bulletin of the Verkhovna Rada of Ukraine), 2011, № 13–14, 15–16, № 17, p. 112), namely: Corporate tax. Art. 133. Tax payers (133.1.2. Railway administration receiving operating profits; 133.1.3. Railway enterprises and their branches receiving non-operating profits) (Верховна Рада України, 2011).
B)	special dues	For example, dues for the use of the facilities of the transport infrastructure (payment for the use of the railway infrastructure)	Charging for the use of the railway infrastructure is not stipulated in the law. However, the infrastructural component is present in the tariffs for the freight by Ukraine's railways.
C)	fines	Charged for the infringements when using the facilities of the transport infrastructure	The Law of Ukraine "On Transport" (Верховна Рада України, 1994) stipulates <i>criminal responsibility</i> for the infringement of the rules and norms regulating the security of traffic and exploitation of various transport types (The Criminal Code of Ukraine specifies in a separate chapter "Crimes against the security of traffic and exploitation of transport" (Chapter XI of the Criminal Code) stated in 17 articles (Articles 276–292 of the Criminal Code)). Responsibility <i>for administrative offenses</i> in the sphere of transport functioning and imposing administrative charges are assigned to administrative commissions at executive bodies of local government; local (district) courts; Internal affairs departments; Fire departments; <u>railway transport departments</u> ; maritime and river transport departments; air transport departments; automobile and electrical transport departments; and Military inspection of the security of road traffic at the Ministry of Defense of Ukraine (Art. 218–235 The Code of Administrative Offenses).
II.	<b>The funds of the railways and their branches mainly accumulated from:</b>	Tariffs, profits, depreciation deductions, accumulated cash	
	Tariffs,	Regulated tariffs should include an investment component stipulated exactly to invest the facilities of the transport infrastructure	In accordance with the Law of Ukraine "On the railway transport" of 4 July 1996 № 273/96-BP (Vidomosti Verkhovniyi Rady Ukrainy (Bulletin of the Verkhovna Rada of Ukraine), 1996, № 40, Art. 183). Art. 9. Tariffs on railway freight (tariffs have the infrastructural and carriage components, however the

No	Possible investment sources	Short characteristic	The use in the railway transport
			investment component is absent in the tariffs for railway freight) (Верховна Рада України, 1996).
III.	<b>Credits by banks and other financial institutions:</b>	Divided into external and internal sources	
A)	Bank investment credits	In Ukraine, they are widely used to finance the transport infrastructure	Currently, Ukrzaliznytsia is not using internal credits. It is using external ones, namely the ones granted by <i>the EBRD</i> (projects: “Introduction of high speed traffic of passenger trains”, “Modernization of the railway section Poltava Kremenchuk Burty Korystivka”), Those granted by <i>the World Bank</i> (project “Raising the throughput capacity of the railway section Znamianka Dolynska Mykolaiv Kherson Dzhankoy”), and by <i>Deutsche Bank</i> (project “Construction of the railway-and automobile bridge passage across the Dnieper in the city of Kyiv”). Credit lines have been also opened at the Saving Bank of Russia. The project details are presented above in Table 2.
B)	Syndicated or consortium based credits	Granted based on the agreements between two and more credit institutions to grant a joint credit to the borrower	A “syndicated” credit is that granted by the EBRD and European Investment Bank for the project “Purchase of rolling stock for the needs of Ukraine’s railway transport (purchase of railway rolling stock for Ukrzaliznytsia: 2 800 semi-carriages and 200 passenger carriages)” for 2009–2012.
IV	<b>Bond loans:</b>		
A)	Securitization of the assets, namely, the issue of 1) corporate bonds, 2) Euro bonds, 3) Infrastructural bonds	1. Through the emission of securities for allocation on domestic stock market. 2. Euro bonds are issued by the borrower when credit is obtained on the Euro market. They may be sovereign, banking, corporate or municipal. 3. Bonds issued specially to finance infrastructural facilities, with circulation period from 15 to 20 years.	1. Ukrzaliznytsia used that instrument to issue, in late 2011, corporate bonds on the domestic stock market in the amount of 1700 mln UAN at 14.5% with the maturity date of 28–29.10.2014, including the Southern Railway in the amount of 300 mln UAN, Lviv Railway – 200 mln UAN, Odesa Railway – 200 mln UAN, Donetsk Railway – 200 mln UAN, and 300 mln UAN, the South-Western Railway – 300 mln UAN. The paying agent for the corresponding securities is UkrSibBank, 2. Ukrzaliznytsia may attract up to 850 mln USD through the issue of Euro bonds, in particular, Donetsk Railway intends to issue and allocate, on the international markets, 225 mln USD worth of bonds. The Southern Railway – 250 mln USD, Odesa Railway – 125 mln USD, and Prydniprovska Railway – 175 mln USD. 3. So far, the use of that instrument for the needs of the railway transport is not stipulated by the Ukraine’s legislation.
B)	Project-based and mezzanine financing	Project-based financing is a type of investment credit. It is an instrument to credit projects, when a great part of the reimbursement of loan funds is realized at the	So far, these instruments have not been used for the needs of the railway transport in Ukraine.

No	Possible investment sources	Short characteristic	The use in the railway transport
		expense of the cash flow generated by the project itself. Mezzanine financing is granted in small shares (10–20%) of the project's total funding. It is one of the sources of financing, when investor provides funds in the form of debt financing with a simultaneous purchase an option to use the borrower's shares in the future at a set price and under certain conditions.	
V	<b>Corporatization</b>	A form of share capital attraction. Through the sale of shares, the company ensures the greatest effect relative to the amount of attracted funds. The creation of joint stock companies in Ukraine was caused by the need to accumulate funds for the solution of economic issues.	In accordance with the Law of Ukraine "On the peculiarities of the creation of public of joint stock companies of the railway transport of general use", adopted by the Verkhovna Rada of Ukraine on 29.02.2012 (Верховна Рада України, 2012), 100% of the authorized capital in the newly created public or joint stock companies is in public property. At the same time, it is prohibited to alienate, turn to outside management, gage, as well as use for the formation of other economic agents' authorized capital. However, a negative trait is lifting the ban on the privatization of the enterprises in the railway transport, which, in the author's opinion, may have unpredictable consequences.
VI	<b>Leasing</b>	With no access to medium- and short-term crediting, leasing provides a real possibility to solve the problem of investing in the modernization of facilities in the transport sector.	To purchase new locomotives (509 units), as stated in "The Program of renewal of the locomotive stock of Ukraine's railways for 2012–2016" approved by the corresponding Decree of the Cabinet of Ministers of Ukraine of 01.08.2011 № 840, it would be advisable to use an operating leasing company or create, for this project, a special one. Then the banks would finance the leasing company, which would purchase the locomotives and turn Ukrzaliznytsia to leasing, which would allow reducing the financial risks for Ukrzaliznytsia and the national budget. The tender announced by Ukrzaliznytsia for the purchase of new consignments of locomotives may be followed by the creation of a leasing company and loans from several banks.
VII	<b>Private-public partnership</b>	Is a mechanism to invest in transport projects?	Ukraine has the law "On private-public partnership" adopted on 1 July 2010 (Верховна Рада України, 2010). Unfortunately, contrary to the progressive experience of Western Europe and Russia in this area, the Ukrainian legislator only considers private-public partnership as a contract, and not as a comprehensive financial-and-legal mechanism allowing the use of various financial instruments and institutions, as well as

No	Possible investment sources	Short characteristic	The use in the railway transport
			organizational-and-legal unions. For example, an alternative variant of the contract as a basis for private-public partnership projects may become clusters – organizational unions of public and private partners with participation of financial institutions with the right to issue financial instruments. Such a mechanism has not been used for railway projects (Доценко-Білоус, 2011).

**Source:** Compiled by the author

However, despite the great variety of instruments, so far Ukrainian companies operating in the transport sector, Ukrzaliznytsia in particular, prefer such a classical type of borrowing as *banking credit*. Thus, in 2012, the amount of credits attracted through foreign banks exceeded 550 mln. USD. The main potentially accessible sources for transport sector projects are local banks, international banks and investors, and local institutional investors: pension funds, insurance companies) the use of funds of which is limited due to the low development of those institutions in Ukraine.

A prospective instrument for attracting long-term financing for large scale infrastructural projects is the emission of debt-based securities (bonds, Euro bonds, infrastructural bonds) against specific infrastructural projects. So far, this instrument has not gained wide acceptance in Ukraine, such practice is only in its initial stage. However, taking into account the advantages of that instrument as compared to other credit products, one can consider it as a prospective source of additional investment resources both for Ukraine as a sovereign state, and Ukraine's banks and corporate sector, in particular, the enterprises of the railway transport (see Table 4). Thus, Ukrzaliznytsia used that instrument (in late 2011) to issue corporate bonds worth 1700 mln. UAN at 14.5% with the maturity date 28–29.10.2014, in particular, the Southern Railway issued the bonds worth 300 mln. UAN, Lviv Railway– 200 mln. UAN, Odesa Railway – 200 mln. UAN, Donetsk Railway – 200 mln. UAN and 300 mln. UAN, and the South-Western Railway – 300 mln. UAN.

Ukrzaliznytsia may well use other instruments, particularly the issue of Eurobonds and infrastructural bonds against specific investment projects. The issue of Eurobonds is presently in intensive use by the banking sector, Kyiv City Council, and by Ukraine's corporate sector (see Table 3). Ukrzaliznytsia may attract up to 850 mln. USD through the issue of Eurobonds, Donetsk Railway intends to issue and allocate on the international markets the bonds worth 225 mln. USD, the Southern Railway – 250 mln. USD, Odesa Railway – 125 mln. USD, and Prydniprovskaya Railway – 175 mln. USD (Лєвченко, 2012). However, the specialists of the investment company Astrum Investment Management argue that, because of the debt crisis in Europe, it will not be easy to attract foreign funds in the nearest future. The situation would change only in case of positive political signal such as successful completion of the negotiations with Russia on the gas issues, a breakthrough in the negotiations with the IMF, etc.

*Emission of infrastructural bonds* (infra-bonds), which will be discussed in detail, is a new financial instrument having prospects for new construction of infrastructural facilities in Ukraine. It is necessary to mention the experience of the Russian Federation, where Ministry of Economic Development Ministry of Finances are already considering, together with "Russian Railways", the possibility to issue the company's infrastructural bonds. The draft law on the peculiarities of infrastructural bonds, which is already prepared in the Russian

Federation, will expand the possibilities of the use of the law on private-public partnership in Russia.

Infra-bonds may be issued by a special project venture (SPV) based on concession agreements between the government and concessionaire company (issuer) in the form of debt liabilities of separate and syndicated investment projects with a guarantee from the state, region or a big financial institution.

Experts point out (Китченко, 2008), that infra bonds have evident advantages, which make them more attractive for investors as compared to other securities issued for the same term or even for a shorter term, and, at the same time, they yield higher incomes for the investors. The attractiveness of such bonds as compared to other instruments may be attained at the expense of tax exemptions or other government guarantees provided both on the principal amount of the bond debt, and on the bond incomes received by the investors for funding the projects. In order to improve the credit quality of infra-bonds, the government agencies may: assume all default risk; limit their liability to a part of tax revenues (incomes); insure the bond issue or purchase a letter of credit if such instruments are economically accessible or make contributions to finance long term reserves for debt servicing or subsidizing the bonds' interest accounts.

### **Conclusions**

1. The medium term mechanism of investing the modernization of Ukraine's railway sector should include, besides such generally accepted sources for financing the transport infrastructure as the funds of the state budget, purpose oriented loans to speed up the solution of issues related to the weaknesses and the creation of the missing links in the basic railway network, also the use of such sources as emission of debt based securities (infra-bonds, Euro bonds); project based and mezzanine financing, syndicated or consortium based credits, and leasing.
2. Analysis shows that Ukrzaliznytsia is widely using, for modernization projects, only its own funds and banking credits. However, the use of mainly external banking credits for railway projects, as well as opening new credit lines in the banks of the Russian Federation in early 2012 to cover the existing investment liabilities creates for Ukrzaliznytsia the danger of losing its financial independence and further bankruptcy.
3. Among other sources for the modernization of Ukrzaliznytsia's fixed assets, there is a possibility to use leasing. Thus, to purchase new locomotives (509 units) as planned in "The Program of the renewal of the locomotive stock of Ukraine's railways for 2012–2016" approved by the corresponding Decree of the Cabinet of Ministers of Ukraine of 01.08.2011, (№ 840), it would be advisable to use an operating leasing company or create a new company particularly for this project. Then the banks would finance the leasing company, which would purchase the locomotives and hand them over to Ukrzaliznytsia on leasing terms, which would allow reducing the financial risks for Ukrzaliznytsia and the national budget. The tender announced by Ukrzaliznytsia for the purchase of a new consignment of locomotives may be followed by the creation of a leasing company and loans from several banks.
4. The use of such a mechanism as project based or mezzanine financing also has its advantages. Thus, as a result of the functioning of that mechanism, a great part of the repayment of loan funds is realized at the expense of the cash flow generated by the project itself, which is prospective for short term projects, for example, such a project as "Construction of a double-track railway tunnel in the section Beskid-Skotarske on the railway direction Lviv-Chop" within International Transport Corridor № 5, planned to be

built as at the end of previous century early as late last century, was included in the plan for preparation for UEFA Euro 2012, but still remains unfinished.

5. In order to learn the possibilities of the use of *infrastructural bonds* in Ukraine to build railway facilities, the global experience of their use, and further preparation of a draft law on infrastructural bonds and the peculiarities of their use on the railway transport” which would expand the possibilities of the Law of Ukraine
6. “On private-public partnership”, it is advisable, in our opinion, to create a work group from experts of Ukrzaliznytsia, Ministry of Infrastructure, and Ministry of Economic Development and Trade of Ukraine. Because now, contrary to the progressive experience of Western Europe and Russia in this sphere, the Ukrainian legislator only considers private-public partnership in the form of a contract, and not in the form of a comprehensive financial and legal mechanism allowing the use of various financial instruments and institutions, as well as other organizational entities.

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## *Kopsavilkums*

### ***Investīciju avoti dzelzceļa transporta attīstībai: Ukrainas pieredze***

Raksta mērķis ir izpētīt un sistematizēt potenciāli pieejamos investīciju avotus Ukrainas dzelzceļa transporta attīstībai, ņemot vērā ārvalstu pieredzi, kā arī piedāvāt praktiskas rekomendācijas investīciju avotu diversifikācijai. Rakstā tiek piedāvāta dzelzceļa infrastruktūras un ritošā sastāva atjaunošanas finansēšanas iespēju salīdzinošā analīze ārvalstīs un Ukrainā. Uzmanība tiek pievērsta Vācijas un Ķīnas pieredzei dzelzceļa transporta attīstības finansēšanā un pārdalē. Izpētes rezultātā, ņemot vērā ārvalstu pieredzi, ir sistematizēti potenciāli pieejamie investīciju avoti Ukrainas dzelzceļa transporta attīstībai. Katrs finanšu instruments ir izskatīts no tā praktiskās lietošanas iespējas aspekta Ukrainā. Īpaša uzmanība tiek pievērsta tādiem finanšu instrumentiem kā infrastruktūras obligāciju izlaide un eiroobligācijas. Pētījuma rezultātā ir sniegtas praktiskas rekomendācijas Ukrainas dzelzceļa transporta investīciju avotu diversifikācijai mūsdienu reformēšanas posmā.

**Atslēgas vārdi:** *investīciju avoti, attīstība, dzelzceļa transports, avotu diversifikācija.*

***Источники для инвестиций в развитие железнодорожного транспорта:  
опыт Украины***

Цель исследования заключается в изучении и систематизации потенциально доступных источников инвестирования в развитие железнодорожного транспорта Украины, учитывая зарубежный опыт, и предоставлении конкретных практических рекомендаций по диверсификации источников финансирования инвестиций в железнодорожный транспорт. В статье проведен сравнительный анализ финансирования обновления железнодорожной инфраструктуры и подвижного состава в некоторых зарубежных странах и в Украине. Внимание уделено опыту Германии и Китая: изучены практические подходы к финансированию и распределению источников финансирования. Изучены и систематизированы потенциально доступные источники инвестирования в развитие железнодорожного транспорта Украины с учетом зарубежного опыта. Каждый финансовый инструмент рассмотрен с точки зрения практического применения в Украине. Особое внимание уделено таким финансовым инструментам как секьюритизация активов, а именно выпуску инфраструктурных облигаций и еврооблигаций. Даны конкретные практические рекомендации по диверсификации источников финансирования инвестиций в проекты железнодорожного транспорта на современном этапе реформирования железнодорожного транспорта Украины.

**Ключевые слова:** *источники инвестирования, развитие, железнодорожный транспорт, диверсификация источников.*

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## **LONG-TERM UNEMPLOYMENT OF WOMEN AS A POSSIBILITY TO BE SELF-EMPLOYED**

Long-term unemployment is a topical problem in all regions of Latvia that are especially affected by the negative business environment and high taxes. Currently, the situation of long-term unemployment in the largest cities of Latvia such as Riga, Ventspils and Liepāja have slightly improved and there are better conditions for the development of own business and exports. The aim of this article is to explore the recent trends in women's employment patterns and to determine solutions for effective women's business development. A discussion of how these trends may differentially affect their future opportunities for continued work will also be provided. In addition, the major self-employment programs for individuals who start to do their own business by returning to the workforce are explained. The article ends with the discussion of possibilities to be self-employed and the future directions for research on women as entrepreneurs.

**Key words:** *women's long-term unemployment, entrepreneurship of women, self-employment possibilities*

**JEL Classification:** *J01 – Labor Economics: General; J64 – Unemployment: Models, Duration, Incidence, and Job Search*

### **1. Introduction**

Active labour market policy can be a complement but not a substitute to other measures (Calmfors, 1994).

The current economic crisis is the most serious one that the European Union (EU) has faced during its existence. The most important changes on the labour market took place in 2009 when the lack of job opportunities forced many job-seekers into long-term unemployment. Compared with 2008, the long-term unemployment rate has increased in several EU Member States, most markedly in the Baltic States, Ireland and Spain (Recovering from the..., 2009).

Unemployment and especially long-term unemployment is one of the most important reasons for social exclusion. Exclusion from the labour market is often seen as an individual problem and a phenomenon that depends on specific characteristics of an individual or a group. Unemployment and exclusion are strongly influenced by the dynamics of economic and macro-political solutions. Unemployment should not only be seen as an individual problem (Nieminen, 2011).

**The aim of research** is to analyse the long-term unemployment problem of women in Latvia for the period 2003 – 2012 and their possibility to become self-employed.

**The following research tasks were set in order to achieve the aim:**

- 1) To summarize theoretical viewpoints and the findings of other researchers on long-term unemployment and women's entrepreneurship;
- 2) To analyse statistical data on long-term unemployed women and women's entrepreneurship;
- 3) To determine the main problems of negative experience in that field;
- 4) To work out the recommendations for starting entrepreneurship.

**The research is based on the data** of Central Statistical Bureau of Latvia.

**Methodology of the research.** General, statistical and sociological methods of research were used: the monographic method, graphical analysis, time series analysis and the method of average prediction.

One of the main theses of scientific methodology is the need to explore all phenomena of development in time. In statistics, by using a special system of statistical methods, there is a possibility to make the research of socio-economic phenomena and process, and changes during the time; in this case – the self-employment rates for two age groups in the period 2003 – 2012.

## 2. Research results and discussion

**Long-term unemployment of women.** The definition of long-term unemployment varies across countries and across international statistical agencies, ranging between 6 months and more than 12 months. The literature commonly makes use of average minimum duration, namely 9 months of unemployment, but it declines steadily thereafter, stabilizing at a much lower level after 18 months.

Women's unemployment is a main problem in the development of developing countries such as Turkey, Spain and other European countries. It is necessary to decrease the unemployment rate of women in Latvia and other European countries because, according to statistical data, there are more women than men.

The Baltic States are somewhat unusual in that unemployment tends to be higher for men than for women. This also holds when other factors are controlled. The unemployment level in 2011 was 4.5 percentage points lower for Latvian women than for men and 4.8 percentage points lower for comparable Lithuanian women, and only 1.3 percentage points for Estonian women. Both cyclical factors and country-specific industrial developments appear to play a role here.

In 2008, unemployment was influenced by the economic crisis, which in Latvia led to job losses for women with a small child and women who are pregnant.

As in most countries, men are the least likely to be unemployed if they are married; in Latvia the risk is further reduced if they have children. Being divorced or widowed is a risk factor for men (Hazans, Eamets, Earle, 2003).

Women have less favorable prospects in the labour market, as they often combine work with family duties and childcare. The unemployment rate for females in many European countries is higher than the one for men. Females would find it more difficult to exit from unemployment than males because of long periods that are led at home. Moreover, in many European countries a poor health, chronic diseases, and lifestyle factors are associated with being long-term unemployed or out of the labour market (Garrouste, Kozovska, Perez, 2010).

**Long-term unemployment situation as a possibility to be self-employed.** History shows that men were those most active in self-employment, business creation and business ownership for decades. More recent definitions are less gendered, suggesting entrepreneurs carry out a series of activities to create something new of value under different conditions. Specifically, entrepreneurs are defined as those who: pursue opportunities without regard to resources they control; create innovative economic organizations for the purpose of gain or growth under conditions of risk and uncertainty; discover, evaluate and exploit opportunities to introduce new goods and services, ways of organizing markets, processes and raw materials through organizing efforts that did not previously exist. Despite the proliferation of research, the population of women entrepreneurs is vastly understudied. This is surprising considering women are one of the fastest rising populations of entrepreneurs, and contribute significantly to innovation, job creation and economies around the world (Brush, 2008).

According to Schwartz, Hisrich and Brush, who described characteristics of women entrepreneurs and their businesses and considered factors leading to success in the first and largest longitudinal study in the United States. Their conclusion was that women were similar

in motivations to men, but were less often business educated, faced barriers to capital access, and grew businesses more slowly than men.

The author Watkins examined biases against women in the United Kingdom, finding different educational and work patterns.

The authors Holmquist and Sundin used Hisrich and Brush's survey in Sweden, finding similarities in motives, but gender differences in business goals.

Following these early works, the study of women's entrepreneurship gained momentum in the 1990s.

According to Cressy, entrepreneurship itself, however, is a "learning experiment": you find out just how good (talented) you are at it only by entering the industry and progressively getting feedback from the market. This may lead to higher or lower output than that produced initially, as the estimate of one's ability randomly rises above or falls below the initial value. So the process of learning starts with some prior belief about one's costs or equivalently about one's productivity as an entrepreneur. These beliefs evolve over time. There is a critical level of (estimated) returns as a function of ability defined by the value of an outside alternative to entrepreneurship ( $W$ ), which might be the present discounted value (PDV) of wage employment. Individuals look indefinitely far ahead in their plans (i.e. operate with an infinite time horizon). A cohort of entrepreneurs enters in each period ( $t$ ). Time in the model is identical to the tenure of a continuing entrepreneur (Cressy, 2008).

In order to achieve substantial economic prosperity, the state and its residents are engaged in maintaining a business friendly environment, raising investment and pursuing effective measures to stimulate job creation, the development of people's competencies and their competitiveness in the labour market. The taxation system is predictable and competitive in the medium term if compared with other countries in the region (National Development..., 2013).

The authors of the paper consider that one of the best ways how to struggle with the long-term unemployment problem is to be self-employed. For those who are living in rural areas there are possibilities to work out the business plan and get funding for rural development. Nowadays that kind of entrepreneurship is very popular in other European countries such as Belgium, Germany, and Poland etc.

At a time when the growth rates of Latvian and world economic observed a sharp decrease, it is essential to provide the opportunity for citizens, what will help to generate additional income and to maintain the current standard of living. A topical and important way how people can get income is to start a business and to be self-employed (Par koncepciju..., 2009).

Measures to encourage women to give greater consideration to running small firms, and to make it easier for them to do so, can take many forms. Different Member States of European Union have tackled many different aspects of the problems, in a range of ways, but no one Member State has all the answers. And since improving the situation requires so-called "soft" actions besides legislation, it is an area ideally suited to exchanging good practices and experiences between Member States (Small and medium..., 2013).

A key problem is access to finance. All entrepreneurs find it difficult to find the investors they need to secure their business, and specific measures are needed to make it easier for women to obtain the funding required for business ventures. And whilst legislative action is appropriate in some areas, in others the main need is to enable women to gain better information. One of the main initiatives the Commission is undertaking is to support networking amongst women entrepreneurs, amongst potential women entrepreneurs, and amongst government agencies and other support organisations which can play a role in encouraging women entrepreneurs (Small and medium..., 2013).

The main goal of the concept is to create the conditions for the unemployed to encourage people to start business, create a micro activity enhancing the business

environment, reducing unemployment, as well as developing a host of capabilities, thereby increasing the proportion of total business employment numbers. In order to implement the target of the concept, the following activities are defined:

- to reduce start-up costs of micro-business;
- to introduce friendly tax policies for micro-businesses;
- to ensure that an entrepreneur can do bookkeeping;
- to provide the access to funds;
- to provide complete information for micro-enterprises.

Further, without addressing the problems and finding the possible solutions to the situation at the national level, it can lead to the negative consequences for the country's economic situation, as:

- the pressure on the social budget will not diminish and there will start to increase the payable amount of unemployment benefits;
- people will not pay various bills and these problems will affect economic activities of service providers directly;
- the qualified labour force searching for work will go to other countries;
- it will be difficult for the State to ensure minimum social guarantees because of reduced incomes;
- the labour resources will not be fully used (Par koncepciju..., 2009).

According to Latvia's National Development Plan 2007 – 2013, the creation of new competitive companies not only will boost domestic competitiveness and develop sectors, but also will stimulate more rapid application of knowledge by companies and will significantly contribute to export growth. It is necessary, with the help of various motivational and support mechanisms, to create a favourable public attitude towards entrepreneurs, an understanding of the role of entrepreneurship in the country's development, and to encourage people's economic activity and creation of new companies. It is particularly important to facilitate creation of new innovative companies in Latvia's regions.

The main tasks for entrepreneurship development were determined in this paper:

- to encourage people, particularly young people, to be entrepreneurs and set up their own business, thereby increasing the prestige and reputation of entrepreneurship, as well as implementing a business setting up motivation program, training and consultations;
- to ensure unified and effective support in setting up a business (mentor's consultations, financial support mechanisms – pre-seed grants, support to networks of "business angels", seed funds, micro-loans, investment guarantees, risk capital funds, resource centres etc.);
- to develop a support infrastructure for new companies in their early stages of development, business incubators etc.);
- to increase the availability of financial resources (starting capital, loans, funding), to reduce administrative obstacles at the national and municipality level for business novices;
- to particularly encourage the creation of companies, including new innovative companies in traditional sectors, in Latvia's regions.

The National Development Plan 2007–2013 did not provide detailed information on women's entrepreneurship development, when most of them also lost their jobs and were the long-term unemployed because of the world's economic crisis and instability since 2008. It is also a possibility for them to find funding for entrepreneurship like for others. Pregnant women and those with a small child need to be supported by the State's institutions, thus ensuring a higher possibility for them to be self-employed and raise a child at the same time.

#### **General guidelines of self-employment and women's entrepreneurship in Latvia.**

According to education and age, labour market outcomes tend to differ significantly by gender and ethnicity. Regarding gender, men's long-term unemployment rates have been

higher than women's since unemployment emerged in the Baltic States at the beginning of the 1990s. This is contrary to most EU countries.

The statistical data on funding, entrepreneurship and self-employed women in a ten year period will be analysed to get a better view of the situation in Latvia.

According to the trend line, we can observe that unemployment increased equally among men and women up until 2008 and started to decrease thereafter within men having higher unemployment rates than women at almost each point in time (Figure 1).

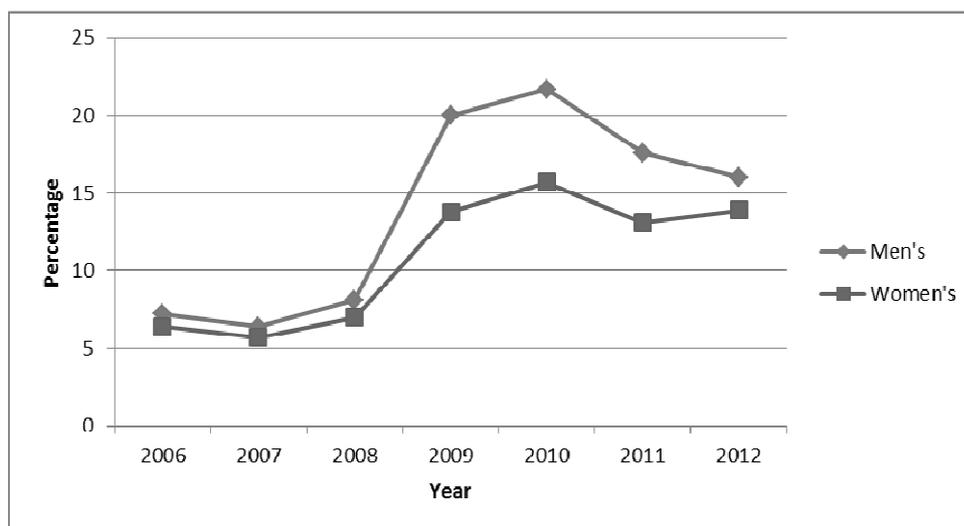


Figure 1. **The unemployment rates from 2006 to 2012 in Latvia (%)**

**Source:** statistical data from the Central Statistical Bureau of Latvia

It appears, however, that the unemployment of men tends to increase during the economic crisis. It seems that jobs where men are over-represented are more sensitive to economic cycles.

Figure 2 shows that from 2010 to 2011, the funding for entrepreneurship increased. It is positive because there is a higher possibility to get funding for entrepreneurship support.

According to the statistical data from the Annual Report 2009 – 2011 of the Rural Support Service of Latvia, the funding between 2009 and 2010 increased by LVL 72'499'502. But between 2010 and 2011, it decreased by LVL 2'763'901.

According to the Central Statistical Bureau, long-term unemployment among young women with a small child or pregnant ones, out of all long-term unemployed women in 2012, was only 6.9% of all inactive women by status (Figure 3).

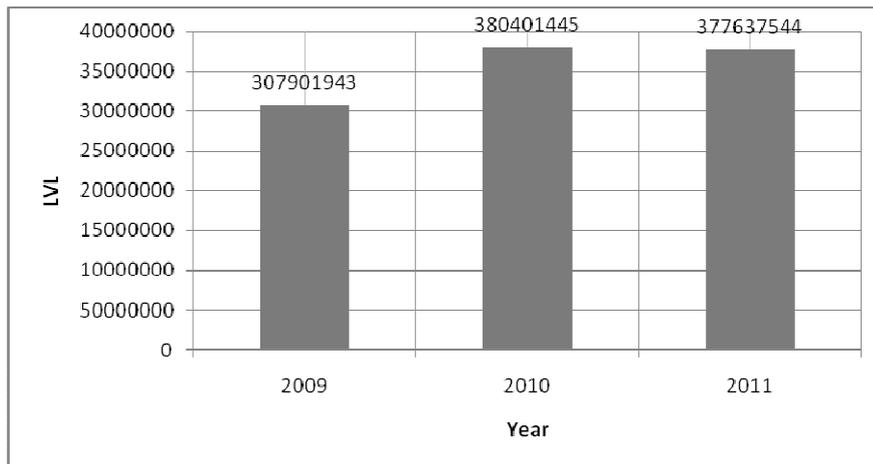


Figure 2. The grants of government funding from 2009 to 2011 in Latvia (LVL)

Source: statistical data from the Annual Report 2009–2011 of the Rural Support Service of Latvia

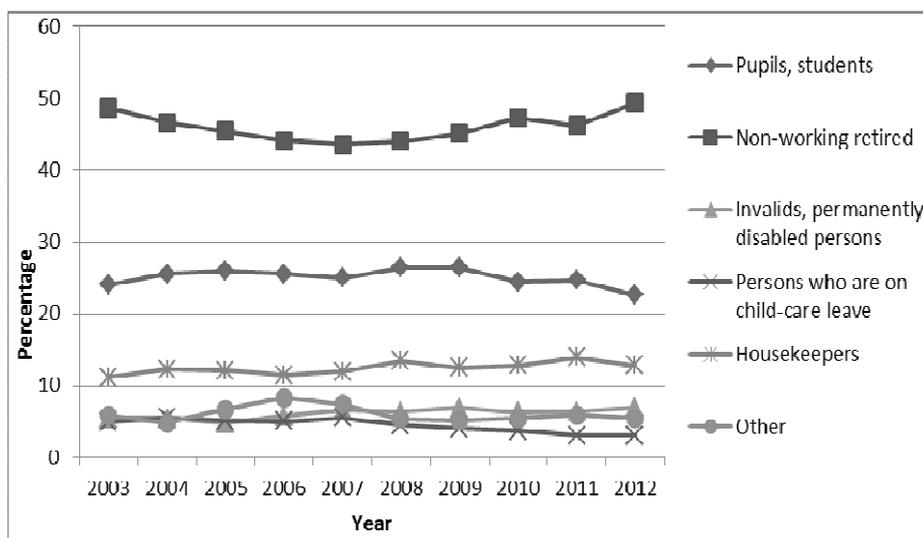


Figure 3. The inactive women by status from 2003 to 2012 in Latvia (%)

Source: statistical data from the Central Statistical Bureau of Latvia

The analysis of time series and the method of average prediction were used to review the statistical data on self-employed women for the next year and make a forecast on them.

The data obtained in the study were statistically processed by the Ms Excel program. The adaptive average growth, forecast and prediction were calculated for two women age groups and the years from 2003 to 2012.

The given curve shows how in a ten year period the ratio of self-employment has changed, thus allowing us to analyse the appropriate studies to find the possible causes. The models of average values are used when the contents of time series in trends are most pronounced and the value of the indicator oscillates around a mean value.

Table 1 shows that there is an increase of adaptive average size, namely, there is a higher possibility that self-employment will grow in the age group of 25 to 34 than in the age group of 35 to 44. The forecast (Ft) for the age group of 25 to 34 was higher for the years

2006 and 2007, during the ten year period, than for other years. For the age group of 35 to 44, there is a lower forecast for self-employment possibility in that age group before ten years.

Table 1

**The adaptive average forecast of rates of increase in self-employment  
for two age groups in Latvia from 2003 to 2012**

Years	Age group of 25 to 34	Adaptive (moving) average growth Mt (N=3)	Forecast Ft	Prediction Error Et	Age group of 35 to 44	Adaptive (moving) average growth Mt (N=3)	Forecast Ft	Prediction Error Et
2003	17.7	–	–	–	23.8	–	–	–
2004	16.2	–	–	–	22.8	–	–	–
2005	13.1	15.67	–	–	25.5	24.03	–	–
2006	13.1	14.13	15.67	-1.54	27.2	25.17	24.03	1.14
2007	12.9	13.03	14.13	-1.10	24.1	25.60	25.17	0.43
2008	13.6	13.20	13.03	0.17	25.5	25.60	25.60	0.00
2009	13.6	13.37	13.20	0.17	22.6	24.07	25.60	-1.53
2010	16	14.40	13.37	1.03	26.3	24.80	24.07	0.73
2011	17.2	15.60	14.40	1.20	25.7	24.87	24.80	0.07
2012	17.9	17.03	15.60	1.43	23.6	25.20	24.87	0.33

**Source:** author's calculations based on statistical data of the Central Statistical Bureau of Latvia

As it is seen from calculations, the prediction error for both groups of age is significant in some periods and there is possibility that there will be changes. It means that future economic situation development can change the self-employment possibility and improve the economic situation. It is positive that in the recent years (as a percentage of the previous years) more women have decided to become self-employed than, for example, from 2005 to 2009.

However, despite the statistical data and estimates of future performance, either starting a business or to be self-employed, each of individuals needs motivation, willpower and the ability to realize the idea. Also it is not possible to manage it without the support of the public institutions and investment availability.

### 3. Proposals

The proposal refers to the analysis of the results obtained in the statistical researches and from expert opinions.

There are defined the following proposals to achieve the aim:

1. To improve not so democratic record-keeping to provide a higher possibility for cooperation with the State Employment Agency, the Rural Support Service, the Investment and Development Agency of Latvia etc.
2. To develop and ensure unified and effective support in setting up a new business with a higher possibility to get mentor's consultations assistance from new contacts through cooperation with business angels, a higher possibility to get financial grants and micro-loans of banks and business support agencies such as the Investment and Development Agency of Latvia, the Rural Support Service etc.
3. To create a favourable environment and institutional support for young women who wish to set up a business and for development of a competitive industry.

4. To develop entrepreneurship or self-employment activities of women in society and to promote an understanding about the business field, accounting, structure and potential of Latvia's industries.
5. To make an active public homepage as a business network for communication between new entrepreneurs, thereby promoting business activities between clients who took loans for entrepreneurship.
6. To develop entrepreneurship that is based on new technological innovations or own potential in different industries.
7. To support co-operation with different kinds of entrepreneurship between Latvia and foreign countries.

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## *Kopsavilkums*

### ***Sieviešu ilgtermiņa bezdarbs kā iespēja būt pašnodarbinātai***

Ilgtermiņa bezdarbs ir aktuāla problēma visos Latvijas reģionos, ko it īpaši ir skārusi negatīvā uzņēmējdarbības vide un augstie nodokļi. Šobrīd ilgtermiņa bezdarba situācija lielākajās Latvijas pilsētās, piemēram, Rīgā, Ventspilī un Liepājā, ir nedaudz uzlabojusies un ir nodrošināti labāki apstākļi veiksmīgākai sava biznesa attīstībai un eksportam. Šī raksta mērķis ir izpētīt sieviešu nodarbinātības jaunākās tendences un ieteikt risinājumus efektīvākai sieviešu uzņēmējdarbības attīstībai. Rakstā tiek spriests par to, kā šīs tendences var dažādi ietekmēt turpmākās iespējas darba attiecību turpināšanai. Turklāt tiks arī aprakstītas galvenās pašnodarbinātības programmas personām, kuras vēlas uzsākt savu uzņēmējdarbību, tādējādi atgriežoties darba tirgū. Raksts beidzas ar diskusiju par iespējām būt pašnodarbinātam un nākotnes virzieniem pētījumos par sievietēm kā uzņēmējām.

**Atslēgas vārdi:** *sieviešu ilgtermiņa bezdarbs, sieviešu uzņēmējdarbība, pašnodarbinātības iespējas.*

## *Резюме*

### ***Долгосрочная безработица женщин как возможность самозанятости***

Долгосрочная безработица является актуальной проблемой во всех Латвийских регионах, что особенно связано с негативной предпринимательской средой и высокими налогами. В настоящее время ситуация с долгосрочной безработицей в больших городах Латвии, например в Риге, Вентспилсе, Лиепаве немного улучшилась, т.к. улучшились обстоятельства развития своего бизнеса и экспорта. Цель данной статьи – исследовать тенденции женской занятости, выдвинуть предложения для эффективного развития предпринимательства среди женщин. В дискуссии обсуждается, как эти тенденции могут повлиять на дальнейшие рабочие отношения. Также будут проанализированы главные программы самозанятости для тех, кто желает начать свою предпринимательскую деятельность и вернуться на рабочий рынок. В конце статьи обсуждаются возможности самозанятости и направления исследований по данной теме.

**Ключевые слова:** *долгосрочная безработица женщин, женское предпринимательство, возможности самозанятости.*

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## **LATGALE INHABITANTS' SATISFACTION WITH THE QUALITY OF SOCIAL ENVIRONMENT MICRO AND MACRO FACTORS "FAMILY", "JOB" AND "STATE" AND ITS IMPACT ON THEIR FEELING OF HAPPINESS**

The last decade's increased demand for the research on the phenomenon of happiness is related to the increase of everyday stress situations, the growing complexity of the construction of a human's personal life, the more difficult choice of life guidelines, the socialization difficulties connected to the significant changes of social norms and values. The researches (Diener, Seligman, 2004; Biswas Diener & Diener, 2006, Adler & Newman, 2002) confirm the links between the feeling of happiness, and life satisfaction in particular with the socio-economic conditions in a state. The low level of the socio-economic development of Latgale region raises the question of the impact of socio-economic factors on Latgale inhabitants' feeling of happiness. In view of all these considerations, the research has been carried out with the aim 1) to examine Latgale region inhabitants' satisfaction with the factors "Family", "Job" and "State", which are representative of both the micro- and the macro-level of the region's social environment; 2) to study the impact of these factors on people's sense of happiness. The methodology of "Oxford happiness questionnaire" (OHQ; Hills, Argyle, 2002) was used for the research of the structure of the Latgale inhabitants' sense of happiness, but the methodology "Family, Job, State" worked out by the authors (Kalvāns, Ignatjeva, 2011) was used to study the micro- and the macro-level factors of the social environment. As the result of the research, Latgale inhabitants' dissatisfaction with the quality of the factor "State" as well as the low satisfaction with their professional life, which is in the area of the factor "Job", has been clarified. It has been discovered that the satisfaction with family relationships partially offsets the discontent with the state's socio-economic conditions and the actual achievements in the professional field, which should be viewed as a factor enhancing Latgale inhabitants' sense of happiness.

**Key words:** *social environment, family, job, government, happiness, Latgale*

**JEL Classification:** *I31 – General Welfare, Z13 – Economic Sociology; Economic Anthropology; Social and Economic Stratification*

### **Introduction**

According to the results of the "World Values Survey", Latvia ranked as the 38<sup>th</sup> by life satisfaction indicator among the 41 member states (by Argyle, 2003). Later sociological studies show that the standard of living is low in the country in general.

In the context of the crisis situation in the country and the inhabitants' overall pessimistic mood in the society, as well as the low overall standards of living, the issue of happiness and psychological well-being becomes relevant in Latvia in general, and in Latgale in particular. It was found out that in 2007 GDP (gross domestic product) per capita in Riga was close to the average numbers of the European Union, but at the same time, it was 15 times higher than the GDP per capita in Daugavpils region (Voronov, Lavrynenko, 2011).

The low standard of living of Latgale's population resulted in the fast decline of the number of inhabitants in the region. Since 2000, the population of Latgale region has decreased by 12%.

According to the official data, the unemployment rate in Latgale is 27%, which is the highest rate of unemployment in Latvia (according to the State Employment Agency, 2011).

Within the framework of the positive psychology, a number of studies have been conducted (Adler, & Newman, 2002; Biswas Diener, & Diener, 2002; Diener, Seligman, 2004), which confirm the link between the sense of happiness and life satisfaction in particular (the cognitive component of happiness) and the socio-economic conditions in the country.

The impact of the income factor on the sense of happiness is not similar in the countries with different socio-economic standards of living – it is determined that in rich countries income has no significant effect on the sense of happiness, while in poor countries (which also includes Latvia and Latgale region in particular), there is a significant impact of income on the sense of happiness (the factors correlation of 0.59 to 0.62) (Clark, Oswald, 1994; Biswas Diener, & Diener, 2002).

These theoretical, empirical and statistical facts raise the question concerning the impact of the social and demographic factors and the economic indicators on the sense of happiness and psychological well-being of Latgale region's inhabitants.

**The aim of the research:** to explore Latgale region inhabitants' satisfaction with the social environment's micro- and macro-level factors "Family", "Job" and "State", to establish the content of these factors, as well as to clarify their impact on Latgale population's sense of happiness.

**The object of research:** the inhabitants of Latgale region.

**The tasks of the research:**

1. To explore the structure of Latgale respondents' sense of happiness in the groups "Happy" and "Unhappy";
2. To explore the evaluation of Latgale population's ideal requirements and the actual quality in relation to the content of the factors "Family", "Job" and "State";
3. To explore Latgale inhabitants' evaluation of the actual quality and their ideal requirements referring to the "price-quality" relationship in the "Family", "Job" and "State".

**Research methods:**

1. M. Argyle's "Oxford Happiness Questionnaire" (Hills, Argyle, 2002), adapted in 2011 (Kalvans, Ignatjeva)
2. Methodology "Family, Job, State" (Kalvans, Ignatjeva, 2011).
3. Methodology "Socio-demographic stratification questionnaire" (Kalvans, 2011).

**The experimental selection.** Since this study (the pivotal part) focuses only on those residents of Latgale region whose general group consists of 240093 inhabitants (according to the data of the Central Statistical Bureau of the Republic of Latvia), the size of the representative selection necessary for the research was 300 respondents.

The stratification of Latgale inhabitants' experimental selection was done according to the following socio-demographic characteristics: gender (men – 37.0%; women – 63.0%), age (18 – 20 years old – 20.1%; 21 – 35 years old – 30.0%; 36 – 45 years old – 23.6%; 46 – 61 years old – 23.6%), marital status (married – 47.7%; unmarried – 52.3%), education (school education – 31.0%; vocational education – 34.3%; higher education – 34.7%), place of residence (town – 63.0%; district – 37.0%), occupation (student – 16.6%; employee – 57.3%; unemployed – 26.0%), material security (low – 31.6%; medium – 51.6%; high – 16.6%), religious activity (low – 33.0%; medium – 43.0%; high – 24.0%) and social activity (socially active – 78.0%; socially inactive – 22.0%).

The stratification of the experimental selection by these socio-demographic characteristics was carried out on the basis of the official statistical data of the general Latgale residents' group, (according to the Central Statistical Bureau of the Republic of Latvia), using the "Questionnaire of the Socio-Demographic Stratification" (Kalvans, 2011).

## 1. General characteristics of the research

To carry out the research on the structure of Latgale population's sense of happiness, the methodology of the "Oxford Happiness Questionnaire" was used (OHQ; Hills, Argyle, 2002), but in the study of the micro- and the macro-level factors of the social environment, the methodology developed by the author of the present article "Family, Work, State" was applied (Kalvāns, Ignatjeva, 2011).

At the first stage of the research, using the data of "OHQ" methodology, in the result of a two-stage cluster analysis, the respondents of Latgale selection (n = 300) were classified into two groups – "Happy" and "Unhappy", depending on the structure of the sense of happiness (see Figure 1).

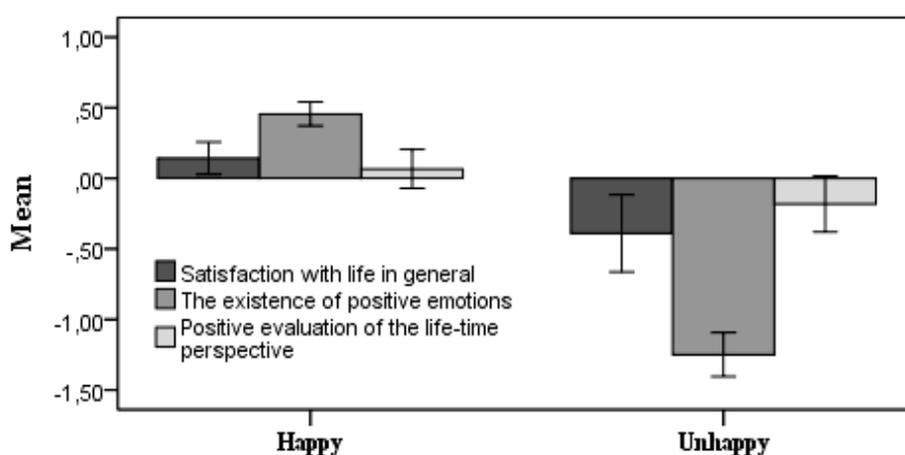


Figure 1. The Structure of Latgale respondents' sense of happiness in the groups "Happy" and "Unhappy"

Source: elaborated by authors

It is possible to establish that the respondents' group "Happy" (73%) is characterized by the moderate satisfaction with life in general and the weak tendency to evaluate their life positively in time perspective.

The group "Unhappy" (27%) can be characterized by the dissatisfaction with life in general, they express a lack of positive emotions and the negative evaluation of life in time perspective.

During the second stage of the research, the analysis of the micro-and the macro-level factors of social environment "Family", "Job" and "State" was carried out in these groups of Latgale population according to the following plan:

1. Latgale inhabitants' evaluation of the actual quality and their ideal requirements in relation to the factors of "Family", "Job" and "State";
2. Latgale inhabitants' evaluation of the actual quality and their ideal requirements in reference to the content-forming scales of the factors "Family", "Job" and "State";
3. Latgale inhabitants' evaluation of the actual quality and their ideal requirements referring to the "price-quality" relationship in the "Family", "Job" and "State".

## 2. The evaluation of Latgale population's ideal requirements and the real quality in relation to the factors "Family", "Job" and "State"

Analyzing the micro- and the macro-level factors of social environment in the respondents' groups "Happy" and "Unhappy", by means of the calculated Student's (t – test) criterion, the statistically significant factor differences in the standardized level ( $p < 0.001$ ) have been stated (see Figure 2).

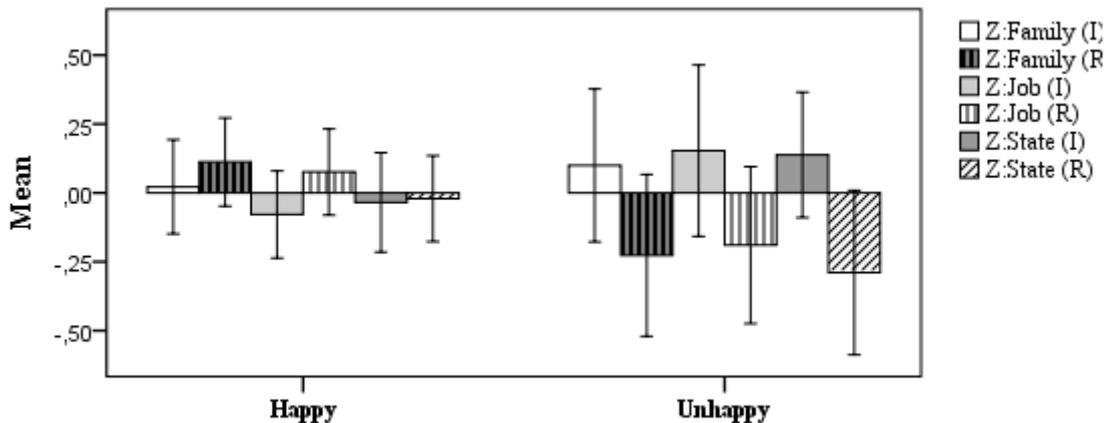


Figure 2. Standardized indicators of the factors "Job", "Family", "State" in the groups "Happy" and "Unhappy"

Source: elaborated by authors

It is possible to ascertain that happy inhabitants of Latgale manifest moderate significance of the analyzed factors, and hence the moderate level of demands in relation to these factors, and the average or high actual achievements. The unhappy inhabitants of Latgale, in their turn, are characterized by high level of the factors studied and the low indicator of actual achievements in regard to these factors. It should be noted that the most essential discrepancy in the group "Unhappy" has been found between the importance of the factor and the actual situation in the factor "State". Thus, the low level of the sense of happiness in the respondents' group "Unhappy" is based on the inconsistency between the significance of the micro- and the macro-level factors of social environment and the respondents' actual achievements and their evaluation of the real situation in respect of these factors.

## 3. The evaluation of Latgale inhabitants' ideal demands and the actual quality in relation to the content-forming scales of the factors "Family", "Work" and "State"

Within the experimental selection of Latgale inhabitants a detailed factor analysis of the structure of the factors "Family", "Job", "State" has been carried out.

In the result of the factor analysis within the scope of the factors "Family", "Job" and "State" three scales characterizing the content of these factors mentioned in the methodology have been distinguished.

Firstly, the ideal significance of the structure scales and the level of actual achievements in relation to the factor "Family" have been analyzed (see Figure 3).

By means of Student's (t-test) criterion, the statistically significant differences have been discovered between the groups of respondents "Happy" and "Unhappy" in the indicators

of the real achievements in the scales “Social relations within a family” ( $F=2,911$ ,  $p<0,05$ ) and “Emotional background in a family” ( $F=22,830$ ,  $p<0,001$ ). But the statistically significant differences between the ideal conceptions in regard to these scales have not been discovered. Statistically significant differences have not been found between the respondents’ ideal conceptions and the real achievements within the scale “The influence of the family on the development of a personality” either (see Figure 3).

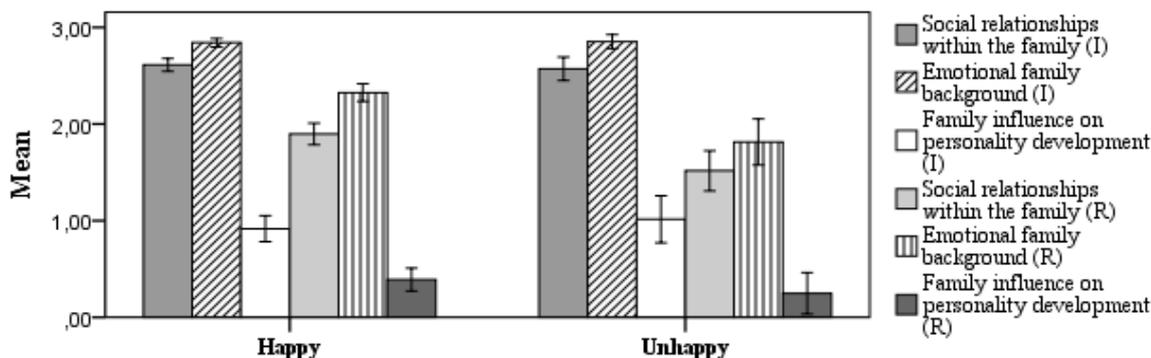


Figure 3. The average values of the factor “Family” scales in the respondents’ groups “Happy” and “Unhappy”

Source: elaborated by authors

The ideal conceptions about family and social relationships and emotional background within the family in Latgale respondents’ group “Happy” are close to the respondents’ actual achievements in these areas, but there is a lack of conformity between the ideal conceptions and the actual achievements in the group of unhappy respondents in the relevant areas of their life. In addition, in comparison with the group “Happy”, the respondents’ group “Unhappy” is characterized by the greater discrepancy between the ideal conception of what social relationships and the emotional background in a family should be and the respondents’ real life.

Table 1

The psychological interpretation of the factor “Family” in the groups “Happy” and “Unhappy” according to their actual achievements

Scales of the factor “Family”	Psychological characteristics of the respondents’ group “Happy”, according to the factor “Family”	Psychological characteristics of the respondents’ group “Unhappy”, according to the factor “Family”
Social relationships within the family	Cohesive, stable, ready to compromise, receiving beneficial social evaluation, able to solve problems.	On average cohesive, stable rather than unstable, ready to make compromises, receiving beneficial social evaluation, moderate potential in problem solving.
The emotional background of the family	Beloved, supportive, demanding, emotionally comfortable.	Beloved, rather supportive, sufficiently comfortable emotionally.
Family influence on personal development	Moderately demanding, slightly restrictive, developing, physically comfortable, imposing obligations.	No major requirements, moderately restrictive, sooner developmental, physically comfortable, but sooner the obligations imposing.

Source: elaborated by authors

Table 1 presents the psychological interpretation of the factor “Family” in the respondents’ groups “Happy” and “Unhappy” according to their actual achievements.

The results of the analysis testify to the fact that Latgale inhabitants’ sense of happiness is not affected by the evaluation of a family’s influence on a personality’s development, though the influence has been ascertained in the spheres of a family’s social relations and its emotional background.

Figure 4 illustrates the level of the ideal significance and the actual achievements of the structure scales in the factor “Job” in the respondents’ groups “Happy” and “Unhappy”.

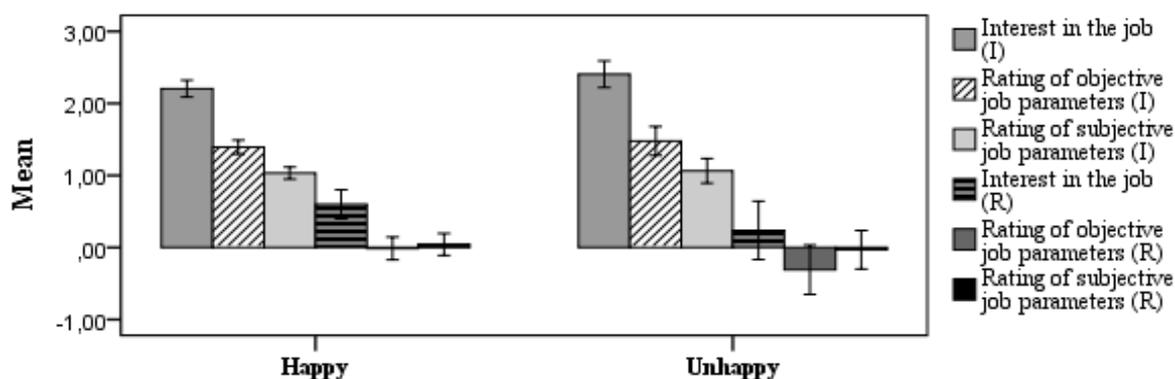


Figure 4. The average values of the factor “Job” scale in the respondents’ groups “Happy” and “Unhappy”

Source: elaborated by authors

In the result of applying Student’s (t – test) criterion it has been found out, that the statistically significant differences are specific only of the scale "Interest in the job" ( $F = 6.676, p < 0.05$ ) and "Rating of objective job parameters" ( $F = 7271, p < 0.05$ ) according to the respondents’ actual achievement.

The evaluation of the objective job parameters in the respondents’ real life in the group “Unhappy” is lower than that in the group “Happy”. Besides, it is possible to state that the representatives of the group “Unhappy” have a slightly higher ideal image of labour, but lower actual achievements in the professional field. It is noteworthy that the average scale values of the parameters “Rating of objective job parameters” and “Rating of subjective job parameters” for Latgale residents belonging to the group “Happy” are not high. This fact reflects the particularity of Latgale region, which is characterized by insufficient supply in the labour market and rather unfavourable working conditions.

The psychological interpretation of the factor “Job” in the respondents’ groups of ‘Happy’ and ‘Unhappy’ has been carried out according to their actual achievements. The results are presented in Table 2.

Table 2

**The psychological interpretation of the factor "Job" in the respondents' groups 'Happy' and 'Unhappy' according to the actual achievements**

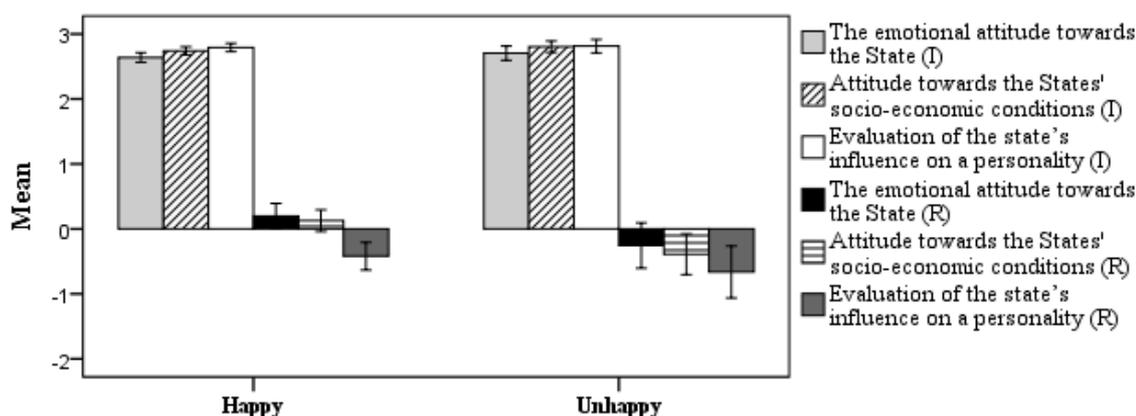
Scale of the factor "Job"	The psychological characteristics of the respondents' group "Happy", according to the factor "Work"	The psychological characteristics of the respondents' group "Unhappy", according to the factor "Work"
<b>Interest in the job</b>	Moderate interest in the job, in general the job provides satisfaction, partly appealing, moderately perspective.	Weakly expressed interest in doing the job, the job gives little satisfaction, insufficiently appealing, weakly expressed consciousness of job prospects
<b>Rating of objective job parameters</b>	Not fixed working hours, partly dangerous, rather unhealthy, fairly rewarded.	Irregular working hours, dangerous, slightly unhealthy, low-paid job
<b>Rating of objective job parameters</b>	Rather difficult, more creative, rather prestigious, quite responsible, moderately voluntary	Rather complicated, not creative, not prestigious, quite responsible, reasonably voluntary

Source: elaborated by authors

Further, the analysis of the ideal significance and the level of actual achievements in the factor "State" in the respondents' groups "Happy" and "Unhappy" is presented.

By means of Student's (t – test) criterion, the statistically significant differences in the average values of ideal conceptions relating to the factor "State" have not been ascertained in the respondents' groups "Happy", "Unhappy".

The statistically significant differences have been discovered in the evaluation of the actual situation in the scales of the factor "State": "The emotional attitude towards the state" ( $F = 1.383, p < 0.05$ ), "Attitude to the socio-economic conditions" ( $F = 1,608, p < 0, 05$ ). Whereas in the evaluation of the actual situation in relation to the scale "Evaluation of the state's influence on a personality", no statistically significant differences between the groups have been observed. The comparison of the scales of the factor under study is presented in Figure 5.



**Figure 5. The average scale values of the factor "State" in the respondents' groups "Happy" and "Unhappy"**

Source: elaborated by authors

The low evaluation of the actual situation in the factor "State" could be linked with the difficult socio-economic situation in Latgale (Воронов, Лавриненко, 2011).

It is possible to ascertain that the two groups of respondents under study give low evaluation to the scales that characterize the real situation in the State, although the evaluation of the scale “State” is lower in the respondents’ group “Unhappy” than the one in the respondents’ group “Happy”. It should be noted that the lowest evaluation of the actual situation in both respondents’ groups is expressed in reference to the scale “Evaluation of the state’s influence on a personality”; the respondents evaluate the state’s socio-economic conditions slightly higher, whereas the highest evaluation is evident in the respondents description of their emotional attitude towards the state.

Table 3 presents the psychological interpretation of the factor “State” according to the actual achievements by the respondents’ groups “Happy” and “Unhappy”.

Table 3

**The psychological interpretation of the factor “State” in the respondents’ group “Happy” and “Unhappy” according to the actual achievements**

<b>Scales of the factor “State”</b>	<b>The psychological characteristics of the respondents’ group “Happy” according to the factor “State”</b>	<b>The psychological characteristics of the respondents’ group “Unhappy” according to the factor “State”</b>
<b>The emotional attitude towards the state</b>	Creating esteem, moderately significant, moderately beloved, weak rather than strong, but open rather than closed.	More like not creating esteem, rather insignificant, not loved, weak, and closed.
<b>Attitude towards the state's socio-economic conditions</b>	Democratic rather than totalitarian, backward rather than developed, legal rather than illegal, rather poor, moderately prosperous.	Democratic rather than totalitarian, backward, dependent, deprived of rights, poor, collapsing rather than prosperous.
<b>Evaluation of the state’s influence on a personality</b>	Separating rather than uniting, non-protective rather than protective, hampering one’s personal development.	Separating, non-protective, hampering one’s personal development.

Source: elaborated by authors

Thus it can be concluded the most significant discrepancy in the evaluation of the factor “State” has been stated between the respondents’ ideal conception of a state and the actual situation in the country. Another factor in the evaluation of which an essential discrepancy between the ideal conception of the factor and its actual disclosure in the respondents’ life has been discovered in the evaluation of the factor “Job”. The smallest discrepancy is described in reference to the factor “Family”.

The factors of Latgale inhabitants’ social environment, namely, “Job” and “State” are the most important factors that lessen Latgale inhabitants’ sense of happiness, because, according to F. Andrews’ and S. Whitey’s findings, the sense of dissatisfaction and unhappiness are caused by the essential discrepancy between the actual and the ideal (Andrews & Withey, 1976).

The research results demonstrate that Latgale population’s dislike of the element of their social environment “State”, which is slightly lower in the group of happy respondents. Those respondents who evaluate the state objectively are happier – besides, they usually have more liberal attitude towards the state.

It is possible to make an assumption that Latgale population’s satisfaction with the micro-level component of the social environment “Family” compensates for the respondents’ dissatisfaction with the existing socio-economic conditions in the state, the state’s influence on a personality’s development and a personality’s emotional sphere.

#### 4. The evaluation of the actual quality and Latgale inhabitants' ideal requirements in the aspect of the relationship between price and quality within the factors "Family", "Job" and "State"

Within the structure of the factors "Family", "Job", "State" we have distinguished the indicators that correspond to the concepts of the factors "Quality" and "Price". These concepts are not the most scientifically correct designation of the factorial features, but these concepts, in the authors' opinion, in the semantic aspect completely reflect the research ideas concerning the investigated indicators.

The concept "Quality" within the context of the methodology "Family, Job, State" is used to denote the desired level of respondents' wishes (the ideal level) regarding the respective indicator of the scale, but the concept "Price" is used to designate the level of the respondents' efforts (the actual level of achievements) made to achieve appropriate quality.

Further we present the analysis of the relationship between price and quality within the factors "Family", "Job" and "State" in the respondents' groups "Happy" and "Unhappy".

The **quality – price relationship in the factor "Family"** as evaluated by the groups studied is illustrated in Figure 6.

According to the calculated Mann – Whitney U criterion, the statistically significant differences between the groups "Happy" and "Unhappy" regarding the factor "Family" have been stated only in the evaluation of the quality of their actual achievements ( $p < 0.001$ ).

The group "Unhappy" has demonstrated the lowest level of a family's actual quality, and the actual "price" that the respondents of this group "pay" for their family's quality is low.

Thus it can be concluded that Latgale inhabitants' sense of happiness promotes their moderate claims to the family's ideal quality, the willingness to make sufficient effort, as well as actual effort making, by means of which the highest actual quality of family relationships is achieved.

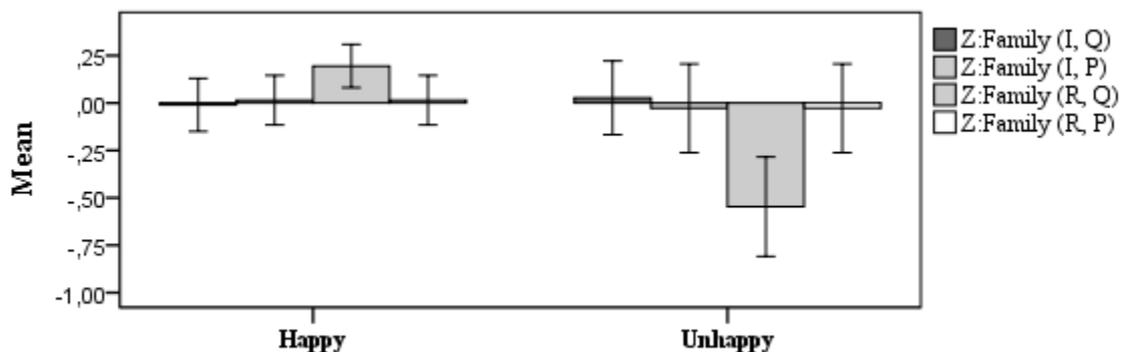


Figure 6. **The quality – price relationship in the factor "Family" as expressed by the respondents' groups "Happy" and "Unhappy"**

Source: elaborated by authors

Figure 7 illustrates the quality – price relationship within the factor "Job" as expressed by the respondents' groups "Happy" and "Unhappy".

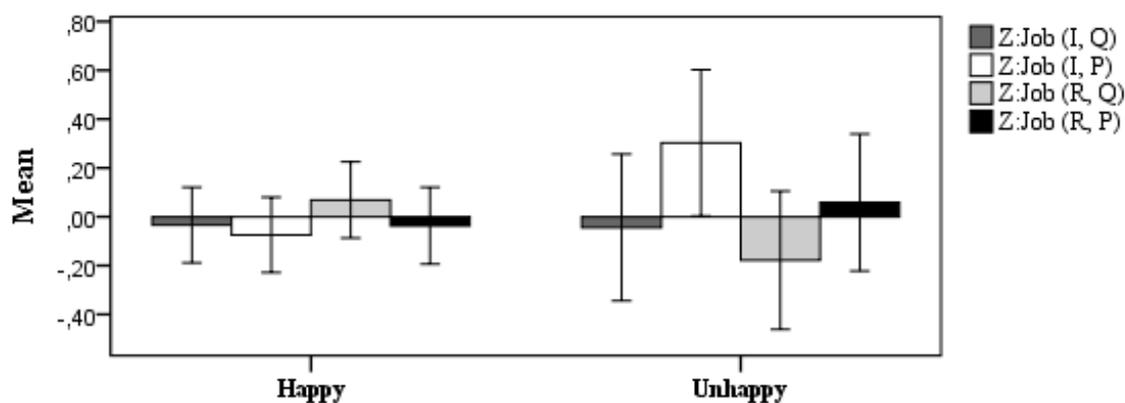


Figure 7. The quality – price relationship within the factor “Job” as expressed by the respondents’ groups, depending on the presence of positive emotions

Source: elaborated by authors

According to the calculated Mann – Whitney U criterion, the differences on the level of statistical trend between the groups “Happy” and “Unhappy” are found only regarding the evaluation of the ideal price ( $p = 0.071$ ) within the factor “Job”.

The respondents of the group “Unhappy” are willing to “pay” (the ideal evaluation) essentially greater price for the quality of their professional sphere than the respondents of the group “Happy”. Despite the fact that the respondents of the group “Unhappy” evaluate their actual contribution to the professional field higher, they are characterized by lower indicators of the quality in the actual professional field.

Thus it can be concluded that Latgale’s happy inhabitants achieve greater results by making less efforts in their professional field; these results promote the sense of satisfaction and enhance the increase in the level of the sense of happiness.

Figure 8 illustrates the quality – price relationship of the factor “State” in the respondents’ groups “Happy” and “Unhappy”.

According to the calculated Mann – Whitney U criterion, the statistically significant differences between the groups “Happy” and “Unhappy” have been identified in the evaluation of the quality of the actual situation ( $p=0,004$ ) and the ideal conception of the quality of the state ( $p = 0.050$ ).

The actual evaluation of the factor “State” is not high across the whole selection of the respondents in general; that is determined by the objective socio-economic problems of Latgale region. However, it should be noted that the “Happy” respondents’ evaluation generally is higher. It testifies to the fact that these respondents’ life perception is much more positive, which can be explained by the fact that the respondents of this group have the obvious dominant of the component of happiness “Existence of positive emotions”.

At the same time, Latgale’s residents, who have been attributed to the group “Unhappy”, give higher evaluation of their contribution to the factor “State” than the inhabitants belonging to the group “Happy”. High evaluation of “price” can cause “Unhappy” Latgale inhabitants’ feeling of disappointment regarding the state.

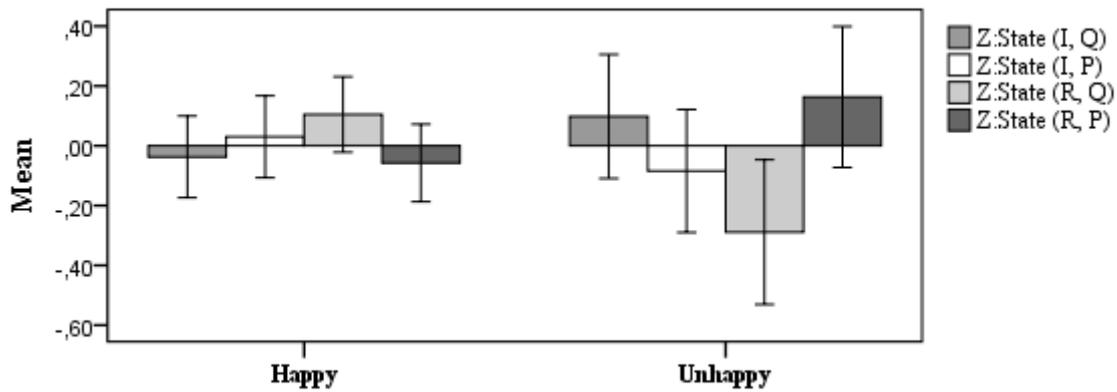


Figure 8. The quality – price relationship of the factor “State” in the respondents’ groups depending on the presence of positive emotions

Source: elaborated by authors

Basing on the research results, it should be noted that Latgale’s happy inhabitants attach less importance to the factor “State”. Taking into account the crucial importance of the factor “Family”, when low importance is attached to the factor “State” in the respondents’ group “Happy”, the conclusion can be drawn that for the “happy” inhabitants of Latgale it is more important what happens to the people who are close to them, and that is what they are willing to take responsibility for and where they are ready to disclose their greatest activity.

### Conclusions

1. Happy Latgale inhabitants are characterized by moderate or low requirements for the ideal quality of the factors of their social environment – “Family”, “Job” and “State”, and moderate or high-level satisfaction with the actual quality of these factors. Unhappy inhabitants of Latgale can be characterized by great demands for the ideal quality of the factors of their social environment “Family”, “Job” and “State” and low-level satisfaction with the actual quality of these factors.
2. It can be concluded that on the whole the inhabitants of Latgale are satisfied with the relations in their families. However, Latgale’s happy inhabitants, in comparison with the unhappy ones, are characterized by greater consistency in the ideal requirements set for the social relationships within the family, the emotional background of the family and the satisfaction with the actual quality of these factors.
3. Both happy and unhappy inhabitants of Latgale express low satisfaction with the actual quality of the factor “Job”. Happy inhabitants of Latgale are more satisfied with the objective parameters of their job and are interested in doing the job, they also have lower requirements for the ideal quality of the factor “Job” (if compared to the results obtained from the respondents’ group “Unhappy”).
4. The dissatisfaction with ideal quality of the macro-level factor of the social environment “State” has been ascertained in the selection of respondents irrespective of their sense of happiness. Both happy and unhappy inhabitants of Latgale negatively evaluate the influence of the state on the development of a personality. Happy Latgale inhabitants are characterized by slightly greater emotional attitude to the state and better evaluation of the actual quality of the socio-economic conditions in the country.
5. The low level of satisfaction with the actual quality of the factors “Job” and “State” is to be viewed as a factor that produces essentially negative impact on Latgale inhabitants’ feeling of happiness, but the satisfaction with the actual quality of the factor "Family" should be considered as a factor that compensates for the negative tendencies mentioned above.

In the result of the analysis of the quality – price relationship in the factors of social environment “Family”, “Job” and “State”, it has been clarified what quality (the ideal evaluation of the factors) Latgale inhabitants would like to obtain, and how much effort they would be willing to make in order to achieve the desired quality.

In accordance with the evaluation of the quality of actual achievements within the factor “Family”, the unhappy inhabitants of Latgale are characterized by low evaluation of the actual quality; the actual “price” paid by the respondents of this group for their families’ quality is significantly lower than the one paid by the happy respondents.

As to the factor “Job”, the unhappy inhabitants of Latgale are ready to pay (the ideal evaluation) essentially higher price for the quality of their professional area than the happy respondents. The unhappy respondents give higher evaluation of their actual contribution to the professional area, but they manifest lower indicators of the actual quality of their professional activity.

Considering the factor “State”, it has been concluded that the happy inhabitants of Latgale are characterized by higher evaluation of the state’s actual quality and lower requirements for the state’s quality in the ideal evaluation. But the unhappy inhabitants of Latgale are characterized by the low evaluation of the state’s actual quality and great demands for the state’s quality in the ideal evaluation.



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## Kopsavilkums

### ***Latgales iedzīvotāju apmierinātība ar sociālās vides mikro un makrolīmeņa faktoru "Ģimene", "Darbs" un "Valsts" kvalitāti un tās ietekme uz viņu laimes izjūtu***

Pēdējo desmit gadu laikā būtiski palielinājās pieprasījums pēc laimes fenomena pētījumiem, kas ir saistīts ar ikdienas stresa situāciju skaita pieaugumu, cilvēka personiskās dzīves konstruēšanas sarežģītības paaugstināšanos, dzīves orientieru komplicētāku izvēli, socializācijas grūtībām, kuras saistītas ar sociālo normu un vērtību būtiskām izmaiņām. Pētījumi (Diener, Seligman, 2004; Diener & Biswas Diener, 200; Adler & Newman, 2002) apstiprina laimes izjūtas, un, it īpaši, apmierinātības ar dzīvi saikni ar valsts sociāli ekonomiskajiem apstākļiem. Zemais sociāli ekonomiskās attīstības līmenis Latgales reģionā aktualizē jautājumu par šī reģiona sociāli ekonomisko faktoru ietekmi uz Latgales iedzīvotāju laimes izjūtu. Ņemot vērā minētos apsvērumus, tika veikts pētījums ar mērķi izpētīt Latgales reģiona iedzīvotāju apmierinātību ar šī reģiona sociālās vides mikro un makrolīmeni prezentējošajiem faktoriem "Ģimene", "Darbs" un "Valsts", kā arī to ietekmi uz iedzīvotāju laimes izjūtu. Pētījuma rezultātā konstatēta Latgales iedzīvotāju neapmierinātība ar faktora "Valsts" kvalitāti, kā arī pazemināta apmierinātība ar savas dzīves profesionālo jomu, kuru prezentē faktors "Darbs". Konstatēts, ka apmierinātība ar ģimenes attiecībām daļēji kompensē iedzīvotāju neapmierinātību ar valsts sociāli ekonomiskajiem apstākļiem un reālajiem panākumiem profesionālajā jomā, kas vērtējams kā faktors, kas paaugstina Latgales iedzīvotāju laimes izjūtu.

**Atslēgas vārdi:** *sociālā vide, ģimene, darbs, valsts, laimes izjūta, Latgales iedzīvotāji.*

***Удовлетворенность жителей Латгальского региона качеством факторов (Семья, Работа и Государство) микро и макроуровня социальной среды и их влияние на ощущение счастья***

За последнее десятилетие наблюдается значительное увеличение спроса на исследования феномена счастья, что связано с увеличением количества повседневных стрессовых ситуаций, усложнением конструирования личной жизни человека и выбора жизненных ориентиров, трудностями социализации, которые связаны с изменениями социальных норм и ценностей. Исследования (Diener, Seligman, 2004; Diener & Biswas Diener, 200; Adler & Newman, 2002) подтверждают взаимосвязь ощущения счастья, и, в частности, удовлетворенности жизнью с социально-экономическими условиями страны. Низкий уровень социально-экономического развития Латгальского региона актуализирует вопрос о влиянии социально-экономических факторов на ощущение счастья жителей данного региона. С учетом данных соображений, было проведено исследование для изучения удовлетворенности жителей Латгальского региона факторами, отражающими сущность микро и макроуровней социальной среды – “Семья”, “Работа” и “Государство”, а также их влияние на ощущение счастья. Результаты исследования выявили недовольство населения Латгалии качеством фактора “Государство”, а также низкую удовлетворенность своей профессиональной жизнью, область, которую представляет фактор “Работа”. Установлено, что удовлетворенность семейными отношениями частично компенсирует недовольство населения социально-экономической ситуацией в стране и реальным качеством профессиональной области, что следует рассматривать как фактор, который оказывает положительное влияние на ощущение счастья населения Латгалии.

**Ключевые слова:** *социальная среда, семья, работа, государство, жители Латгальского региона.*

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