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THROUGH ECONOMIC GROWTH TO THE VIABILITY OF RURAL SPACE*

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Abstract. Rural areas as a necessary component of living space for the population is an increasing focus both in official documents of various EU institutions and in research investigations. Both the documents and the research papers stress the necessity to enhance and maintain the viability of rural areas. The viability of rural areas is ensured by employment opportunities and the readiness of residents for active and innovative economic activity. The authors' research focuses on an analysis of vertical and horizontal changes in entrepreneurship in the period 2009-2015 and their effects on changes in the living space in the territories analysed, which primarily involves the country's regions, but a special focus is placed on the mentioned processes in territorial units of the regions – municipalities –, as the life of residents is influenced not only by national policies but also by on-going processes in the administrative territories of local governments. Zemgale region was chosen for an in-depth analysis of these processes. LURSOFT data for the period 2009-2015 and Central Statistical Bureau data for the period 2013-2015 were used as information sources. The data were processed by quantitative (growth) and qualitative (structural change) statistical analysis methods. The Eurostat methodology and a methodology developed by the authors for classification of industries were employed for the analysis of structural changes in the national economy. The development level-rate matrix method was employed for an in-depth examination of the research results. The research results showed that regardless of the global economic crisis, both vertical growth and positive horizontal change processes took place in the national economy in all five regions of Latvia, nine cities of national significance as well as in all 110 municipalities that composed the rural areas of Latvia. The analysis of the information allows concluding that, first, performance trends were observed in the rural space, which contributed to economic growth; second, there was no direct causal relationship between the population density of rural territories and economic activity in the rural territories; however, third, it leads to an opinion that the economic growth in the rural territories was greatly affected by the quality of local governance and local community residents' readiness for active, innovative and inclusive action.

Keywords: living space, structural changes, knowledge-based economy, local governance, local community

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1. Introduction

In the last decade, prospects for national development have been in focus in Latvia several times. On 10 June 2010 the Parliament approved the Sustainable Development Strategy of Latvia until 2030 "Latvia 2030" (Latvia 2030). Two years later, a new policy document was produced – the National Development Plan 2014-2020, which was adopted by the Parliament on 20 December 2012 (NDP). This means that officially the strategy documents have been produced and priorities have been set. One of the most essential objectives is to approach the averages of EU Member States in all the areas of life and, first of all, in economic development, which functions as an important tangible factor in smart growth (Bacon, Brewin 2016). A question remains – what is the progress in achieving the targets?

In terms of area and population living in this area, Latvia is actually close to the averages of the European Union (EU-28). In the EU, rural territories occupy 44.1 % and intermediary territories – 44.4% of the total area, while in Latvia it is 40.2% and 43.6%, respectively. A similar situation is observed with regard to the distribution of the population. In the EU, 19.2% of the total population live in rural territories and 36.4% in intermediary territories; in Latvia it is 22.2% and 27.0% (CAP 2016). At the same time, labour productivity in Latvia is less than 75% of the EU – 28 average and, consequently, GDP per inhabitant in Latvia is less than 75% of the EU – 28 average. The Global Competitiveness Index does not show any improvement – on the contrary – a deterioration was observed (in 2015/2016, Latvia ranked 44th, while in 2016/2017 it ranked 49th) and among the three Baltic States Latvia performed the worst (Global Competitiveness 2016/2017). For this reason, a topical problem in research is the promotion of viability of the rural space, which is composed of 110 municipalities and where 49.2% of the total population live, through smart growth and forming vital rural areas, as the role of rural space in the wellbeing of the population increases (Making Europe 2016).

The theoretical framework of the present research involves the understanding of viability of rural areas and of the role of a knowledge-based economy in the mentioned processes. The understanding of rural vitality and viability has become an important research problem in the beginning of the 21st century. First of all, the meanings of the concepts have to be explained. Vital rural territories are the territories where strong, active and inclusive relationships among residents, the private sector, the public sector and civil society organisations function in the economic, social and environmental spaces. Vital communities are those that are able to cultivate and enhance these relationships in order to create, adapt and thrive in the changing world (Sott 2010). Vitality is increasingly portrayed as a complex, multi-dimensional concept that increased use of the skills, knowledge and ability of local people, strengthened relationships and communication, improved community initiative, responsibility and adaptability, sustainable, healthy ecosystems with multiple community benefits, appropriately diverse and healthy economies (Grigsby 2001, Fabuš 2017).

However, rural viability is explained as the ability of a local community to succeed by using available physical and human resources of this territory. Particularly effective leadership within the community is necessary in order to assert successful community action, encourage entrepreneurship, and improve community viability (Grenčiková et al. 2017; Slinták 2017, Ignatavičius et al. 2015).

A significant role in both vitality and viability is played by economic activity. The health of the local economy is viewed as one of the key factors for maintaining the viability of a territory inhabited by a community (Sott 2010, Grigsby 2001, Tvaronavičienė, Gatautis 2017).

Creative and diversified economic activity has to be promoted, which contributes to employment and, therefore, makes a territory populated as well. Integrated economic sectors and strong local economies are necessary (Bacon, Brewin 2016; Naldi et al. 2015). There are three priorities in the field of economic development:

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developing an economy based on knowledge and innovation, promoting a more resource efficient, greener and more competitive economy and fostering a high-employment economy delivering economic, social and territorial cohesion (European Commission, 2010). As Latvia joined the European Union in 2004 and integrated into the OECD country group in 2016, the formation and development of a knowledge-based economy has become a practical task and an object of research. "The knowledge based economy" is an expression coined to describe trends in advanced economies towards greater dependence on knowledge, information and high skill levels, and the increasing need for ready access to all of these by the business and public sectors (OECD, 2005, The Measurement...). The aim of the research: to assess vertical and horizontal changes in entrepreneurship in the period 2009-2015, placing a special focus on trends in the changes in the knowledge-based economic segment. The research performed an assessment of the changes in: a/ Latvia as a whole; b/ five regions of Latvia; c/ local administrative units of the regions – municipalities, which form the entire rural space of Latvia. LURSOFT data for the period 2009-2015 and Central Statistical Bureau data for the period 2013-2015 were used as information sources. The data were processed by quantitative (growth) and qualitative (structural change) statistical analysis and development level-rate matrix methods.

2. Vertical changes in entrepreneurship in the period 2009-2015

The period for which an analysis was performed was complicated. It involved both an economic crisis and a post-crisis period. Since knowledge-based economic growth has been prioritised in the 21st century, the research simultaneously analysed economic growth both in the entire economy and in the knowledge-based economic segment, which was the focus of the research. Such an approach is in line with the OECD strategy on development that technology is bringing unprecedented chances in rural areas (Innovative Rural Regions). According to the EUROSTAT methodology, the knowledge-based economic segment consists of high tech, medium high tech manufactories and knowledge intensive services (HT, MHT, KIS) (European Commission, 2008).

By comparing the key indicators of entrepreneurship – the number of enterprises, the number of employees and net turnover – both in the cities of national significance and in the 110 municipalities, one can get insight into what took place in entrepreneurship in the period of six years (Table 1).

Table 1. Growth of entrepreneurship in the period 2009-2015 (vertical growth – percentage change)

	Number of enterprises	Number of employees	Total net turnover	Net turnover per employee
Cities of national significance (9 cities)				
All enterprises	152.9%	114.8%	143.7%	125.2%
KBE segment	185.1%	129.7%	146.9%	113.3%
Rural territory - 110 municipalities (incl. towns in municipalities)				
All enterprises	179.6%	128.5%	169.2%	131.8%
KBE segment	236.6%	143.1%	133.1%	133.8%

Source: authors' calculations based on LURSOFT data

The number of enterprises increased at a faster rate than the number of employees, total net turnover and particularly net turnover per employee. This trend could be observed both at national level and in rural territories with regard to entrepreneurship as a whole and the KBE segment. However, the growth of the KBE segment both in the cities and in rural territories considerably exceeded an increase in the number of all enterprises. This means that innovative economic activity strengthened, as the growth of the KBE segment contributes to the new knowledge and skills of beginners in entrepreneurship. Not a less important finding is that rural areas as a space, in terms of entrepreneurship, climbed at least a step towards the level of cities, as growth rates were higher in the rural territories (municipalities) than in the cities, which decreased disparities between the cities and the rural areas.

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The overall situation in Latvia is important, but only for comparison with its neighbouring countries – first of all, Estonia and Lithuania – and the country's internal territorial units, which can reveal similarities and differences in development processes in the territorial units or reveal how successfully the spatial aspect of cohesion is being implemented (Table 2).

Table 2. Growth of entrepreneurship in the regions in the period 2009-2015 (vertical growth – percentage change)

Growth of entrepreneurship as a whole						
	Zemgale	Pieriga	Vidzeme	Latgale	Kurzeme	9 cities
Number of enterprises	177.1	198.0	165.1	160.8	158.7	152.9
Number of employees	123.8	137.3	124.4	110.7	121.0	114.8
Total net turnover	164.1	171.6	175.4	151.0	165.9	143.8
Net turnover per employee	132.5	124.9	132.8	136.4	137.2	125.2
Growth of knowledge-based entrepreneurship (KBE)						
	Zemgale	Pieriga	Vidzeme	Latgale	Kurzeme	9 cities
Number of enterprises	236.8	255.3	202.5	177.6	207.8	185.1
Number of employees	125.2	159.8	127.3	122.4	129.8	129.7
Total net turnover	135.0	128.4	186.9	144.8	146.9	146.9
Net turnover per employee	107.6	119.1	134.8	116.8	227.1	112.3

Source: authors' calculations based on LURSOFT data

The processing of the LURSOFT data showed that the growth of entrepreneurship as a whole and the vertical growth of its KBE segment were observed in all the regions, as well as in the country's nine cities of national significance. However, the growth of entrepreneurship as a whole in all the regions was faster than that in the nine cities of national significance, even though the growth rates in the regions were different. It is necessary to stress the growth of the KBE segment in particular, which outpaced that of entrepreneurship as a whole both in terms of number of enterprises and in terms of number of employees. The mentioned faster growth took place not only in the cities but also in all the regions. Two regions – Vidzeme and Kurzeme – should be particularly highlighted, as the net turnover per employee in the KBE segment exceeded that in the regional economy as a whole.

3. Horizontal changes in entrepreneurship in the period 2009-2015

Horizontal changes in entrepreneurship as a whole reflect not only the size of any particular segment but also its influence. The greater the number of enterprises of some segment is, the greater the number of individuals is employed in the segment and, what is more important, the significantly greater proportion of net turnover of the segment is in the total net turnover and a greater focus is placed on the segment's problems in the economic development strategy. The greater focus could be associated with both positive and negative trends.

Table 3. Similarities and differences in segmental restructuring processes in the regions in the period 2009-2015 (structural change in %-points)

Manufacturing segment						
Indicators	Zemgale	Pieriga	Vidzeme	Latgale	Kurzeme	9 cities
Number of enterprises	-1.77	-1.07	-0.79	-1.93	-0.34	-0.60
Number of employees	+1.21	-1.49	+0.85	-0.53	+0.29	-1.89
Net turnover	+7.16	+0.50	-1.76	+6.01	-0.65	-0.65
Segment of agriculture, forestry and fisheries						
Number of enterprises	+1.41	-0.31	+5.61	+10.75	+7.11	+0.1
Number of employees	+1.29	-0.45	+1.72	+5.53	+3.20	+0.10
Net turnover	-0.74	+1.72	+5.36	+9.32	+7.67	+0.24
Services segment						
Number of enterprises	-1.44	+2.39	-4.83	-7.70	-5.81	+1.9
Number of employees	-3.32	+1.25	-2.98	-2.65	-3.10	+2.74
Net turnover	-6.95	-1.70	-5.50	-2.59	-7.36	+6.20
Segment of other industries (construction, environmental and communal services, mining)						

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Number of enterprises	+1.78	-0.93	+0.01	-8.12	-0.97	-1.33
Number of employees	+0.82	+0.69	+0.41	-2.35	-0.39	-1.09
Net turnover	+0.53	+1.34	+2.08	-2.76	+0.34	-5.79
Knowledge-based economic segment						
Number of enterprises	+4.08	+6.54	+2.72	+0.99	+2.68	+5.47
Number of employees	+0.14	+2.28	+0.26	+1.2	+0.41	+3.30
Net turnover	-1.10	-3.77	+0.29	-0.26	-0.61	+0.21

Source: authors' calculations based on LURSOFT data

The data of Table 3 reveal these trends. There are two positive ones. First, the influence of agriculture, forestry and fisheries rose, as this segment's proportion increased in terms of numbers of enterprises and employees in four regions, which led to an increase in the segment's proportion of net turnover in the total net turnover. The greatest growth of this segment was observed in Latgale region where the maintenance of rural vitality is of great importance due to both the decrease in the population, the long distance from the capital city of Riga and the location close to the border. Second, the growth of the KBE segment was quite significant. In all the regions and cities, an increase in the proportion of this segment took the form of increase in both the number of enterprises and the number of employees. Unfortunately, the proportion of net turnover increased only in Vidzeme region and the cities. The maximum decrease in the proportion of net turnover of the KBE segment in the total net turnover was observed in Pieriga region, which could be explained by increase in the proportions of net turnover in a number of other economic segments and a minimum increase in net turnover (18.2 %-points) in the segment of knowledge-based services in the six-year period of analysis as well as by the fact that the mentioned services dominated (96.3%) particularly in Pieriga region. In the world, the so-called gentrification process intensifies, which manifests itself as the movement of competent and quite wealthy individuals to peri-urban territories, thus providing opportunities for themselves to live in a favourable natural environment and do distance work or provide knowledge-intensive services on the Internet at the place of residence (Kruzmetra 2011).

A negative trend is a decrease in the proportion of manufacturing, although it is an economic segment that considerably contributes to the value added created during production. The number of this segment's enterprises decreased in all the regions and cities. The proportion of individuals employed in this segment decreased in two regions and the cities. According to survey data, manufacturing provided the greatest proportion of jobs (21.86% of the total employees) right behind the segment of services (53.8%), and employment and incomes are among the key factors contributing to retaining population in rural areas (Making Bioeconomy Work for Sustainable Development 2015, The Rural Challenge 2010, Bacon, Brewin 2016). Progress in this segment could be expected if the processing of organic produce increases, innovative of the bioeconomy is implemented (e.g. Azimova et al. 2017; Svetlanská et al. 2017; Ryabchenko et al. 2017). Second, an increase in the proportion of the knowledge-based economic segment in terms of numbers of both enterprises and employees has not yet resulted in an adequate increase in net turnover, although one can expect a maximum increase in this particular indicator.

4. Vertical and horizontal changes in entrepreneurship in Zemgale region in the period 2009-2015

Since both official EU documents and research papers increasingly stress the local territory approach (Making Europe 2016, Sott 2010, Janvry 2007, Tvaronavičienė, Černevičiūtė 2015, Yang, Černevičiūtė 2017) the present research also performed a vertical and a horizontal analysis at regional level, choosing Zemgale region consisting of 20 municipalities as an example. The research results convincingly showed that there were significant disparities in both vertical growth and segmental distribution also within the regions, which have to be taken into consideration in the smart growth strategy.

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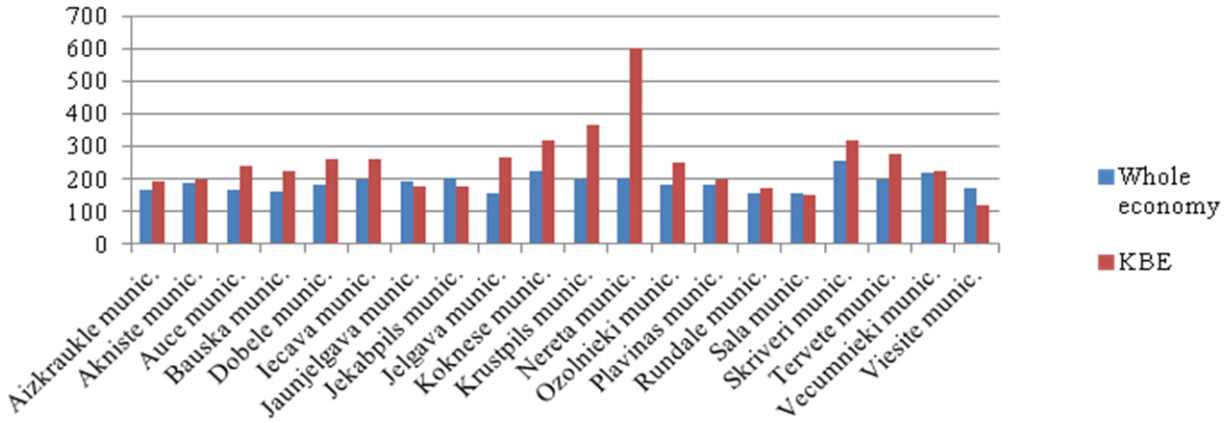

Figure 1. Vertical growth of entrepreneurship in the municipalities of Zemgale region in the period 2009 – 2015

Source: authors' calculations based on LURSOFT data

A comparison of quantitative growth in the whole economy and the knowledge-based economic segment revealed that the growth of the KBE segment in terms of numbers of enterprises and employees and particularly in terms of net turnover in 16 municipalities of the region exceeded that in the remaining four municipalities (Jaunjelgava, Jekabpils, Sala and Viesite), convincingly proving the role of the KBE segment in maintaining the vitality of rural areas and, to a greater extent, their viability, which is significantly affected by economic growth (Fig. 1). The data showing the processes lead to one more conclusion that the key factor of disparities was not the location of a municipality because the municipalities of Nereta (with the greatest increase in the number of employees and the second greatest increase in net turnover) and Viesite (with decreases in the number of employees and net turnover) are neighbouring municipalities, both are situated far away from the capital city and both lie close to the border of Latvia and Lithuania. One can assume that such performance have been affected by other factors influencing entrepreneurship.

Disparities across municipalities within a region are also indicated by the sizes of segments of entrepreneurship (Figure 2). Agriculture and forestry is the dominant segment in six municipalities out of the twenty municipalities of Zemgale region: 59.68% in Jekabpils, 53.97% in Akniste, 47.83% in Viesite, 46.15% in Tervete, 44.12% in Krustpils and 43.14% in Nereta. Manufacturing ranged from 15.95% in Auce municipality to 0.0% in Akniste municipality. Both municipalities lie close to the border with Lithuania, and the only difference is that they are not neighbouring ones. This means that the location is not the key influencing factor. The segment of services was specific to the majority of market sector statistical units in the municipalities, and it was the dominant segment in 14 municipalities. It is useful to remember that retaining rural vitality also involves meeting the need of residents for various services, which contributes to maintaining population in the rural space.

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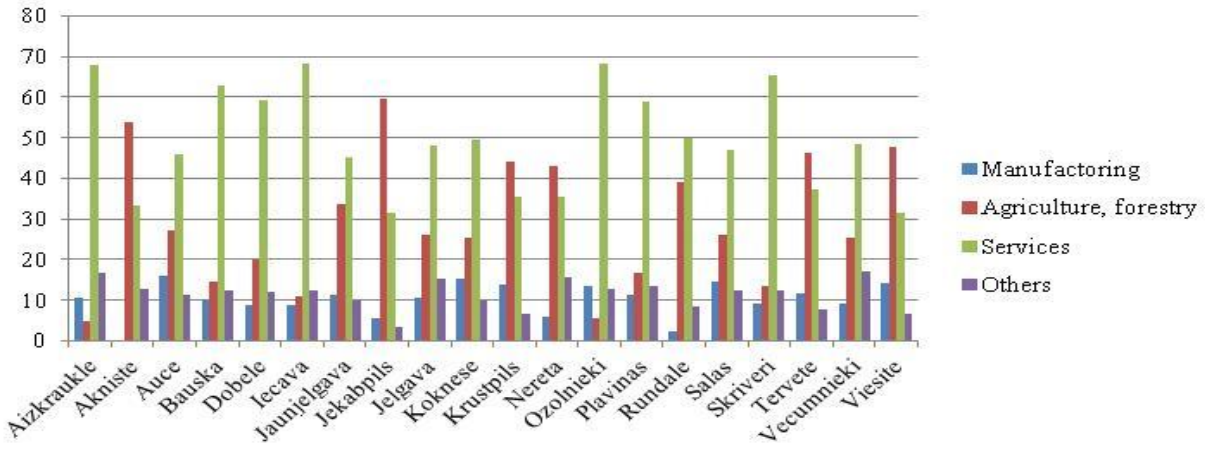

Figure 2. Percentages of segments of entrepreneurship in the municipalities of Zemgale region in 2015
Source: authors' calculations based on LURSOFT data

The knowledge-based segment could be singled out from the list of registered enterprises in the LURSOFT database, and its position and role in the economy of a municipality could be assessed. The proportion of the knowledge-based segment ranged from 5.65% (Jekabpils municipality) to 25.9% (Ozolnieki municipality). A proportion of more than 20.0% was observed in three municipalities, in five municipalities it was in the range of 15.1-20.0%, in seven municipalities – in the range of 10.0- 15.0% and in five municipalities it was less than 10.0% (Figure 3). In all the municipalities, without an exception, there were provided such knowledge-intensive services as educational, health, cultural and sport services. There are more problems with the entry of HT and MHT manufacturing. Entrepreneurs have to identify niche products being competitive in the international market, as domestic demand for innovative products is very insignificant. The complicacy of this process is confirmed by the research results. In seven municipalities, a component of this segment existed already before 2009, and it remained during the entire period of analysis. In four municipalities, HT and MHT enterprises started operating in the period of analysis, which means that a segment has emerged that has been able to survive. In two municipalities, there were activities aimed at establishing this component of the segment, yet stability was lacked there (it vanished after it appeared). Finally, there were seven municipalities where only knowledge-based services were provided. This means that the establishment of a knowledge-based segment in the economy of a municipality requires both the understanding of the need for such a segment and competence in forming the segment practically, and it particularly relates to the foundation and maintenance of HT and MHT enterprises and the assessment of their performance (Fig. 3).

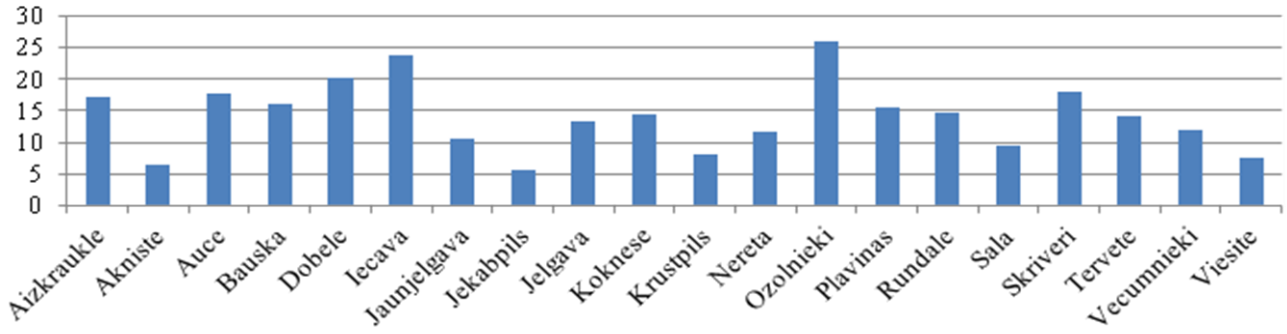

Figure 3. Percentage of the knowledge-based economic segment in the economy of Zemgale region municipalities in 2015
Source: authors' calculations based on LURSOFT data

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The data were analysed taking into account two segments of the knowledge-based economy. The segments are comprised of high and medium high technology enterprises and knowledge-intensive services (Eurostat).

Table 4. Increase in the number of knowledge-based economy enterprises (%) in Zemgale region in the period 2009- 2015

	Enterprises		Employees		Net turnover	
	HT, MHT	Scientific services	HT, MHT	Scientific services	HT, MHT	Scientific services
Jelgava	136.4	204.2	65.8	54.2	370.5	148.4
Jekabpils	150.0	190.4	366.0	326.2	210.4	124.5
Municipalities	164.0	244.4	102.2	131.8	118.0	157.2

Source: authors' calculations based on Lursoft data

The Table 4 data indicate that growth was reported in both economic segments in Zemgale region. A LURSOFT data analysis performed by the authors also give insight into both segments of the knowledge-based economy broken down by detail, placing a special focus on the researched processes in the twenty rural municipalities of Zemgale region.

According to the LURSOFT data, the number of high and medium high technology enterprises doubled in the municipalities of Zemgale region over seven years. It has to be especially stressed that the number of high technology enterprises increased from two to six, and their area of activity also increased – from two to five municipalities.

Table 5. Increase in the number of knowledge-based economy enterprises in Zemgale region municipalities in the period 2009- 2015

Knowledge-based manufacturing	2009	2015	Growth
High Tech			
C21.20 Manufacture of pharmaceutical preparations	0	1	+1
C26 Manufacture of computer, electronic and optical products	2	5	+3
Media High Tech			
C20 Manufacture of chemicals and chemical products	10	20	+10
C27 Manufacture of electrical equipment	1	1	=
C28 Manufacture of machinery and equipment n.e.c.	7	12	+5
C29 Manufacture of motor vehicles, trailers and semi-trailers	1	2	+1
	21	41	+20

Source: authors' calculations based on Lursoft data

As shown in Table 5, in 2015 in the segment of high and medium high technology, two major kinds of economic activity were the most apparent in the municipalities of Zemgale region:

- manufacture of chemicals and chemical products (C20) and
- manufacture of machinery and equipment n.e.c. (C28),
- manufacture of computer, electronic and optical products (C26).

Growth in the mentioned tree kinds of economic activity was the most significant. However, just like any phenomenon, high and medium high technology businesses did not expand homogenously in all the municipalities. At least five scenarios of progress for the knowledge-based economy could be highlighted (Table 6).

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Table 6. Spatial perspective of growth in the knowledge-based economy

Group	Division of municipalities by indication	2009	2015	Municipalities and their number
1	Municipalities where this group of enterprises operated in 2009, continued operating in 2015, yet the number of enterprises has not changed	7	7	Two municipalities – Auce, Ozolnieki
2	Municipalities where this group of enterprises operated in 2009, but the number of enterprises significantly increased until 2015	9	20	Four municipalities – Bauska, Dobele, Skriveri, Vecumnieki
3	Municipalities where this group of enterprises operated in 2009, but the number of enterprises decreased or the group stopped its activity until 2015	5	2	Two municipalities – Aizkraukle, Sala
4	Municipalities where this group of enterprises did not exist in 2009, but it emerged until 2015	0	12	Six municipalities – Iecava, Jekabpils, Jelgava, Krustpils, Plavinas, Viesite
5	Municipalities where this group of enterprises did not exist in 2009 and has not emerged until 2015	0	0	Six municipalities – Akniste, Jaunjelgava, Koknese, Nereta, Rundale, Tervete
		21	41	20 municipalities

Source: authors' calculations based on Lursoft data

The facts acquired in the analysis raise a number of questions, the answers on which have to be given in further research:

- to what extent the experience built up in the particular area affects this process, which refers to Group 2 of municipalities;
- how progress in the segment of high and medium high technology businesses affects the municipality's natural and financial and especially human resources (Groups 4 and 5);
- what kind of cooperation between scientists and practitioners is necessary in order to contribute to the establishment of high and medium high technology enterprises in the rural space of the country.

The Table 6 data indicate such a possibility, yet the problem is how to increase the pace of enterprise establishment.

At the same time, the Table 4 data indicate that particularly the number of providers of knowledge-intensive services increased both in regional towns and rural municipalities. However, it should be taken into consideration that, according to the Eurostat methodology, knowledge-intensive services are classified into four categories: first, services directly associated with high- and medium high-technology; second, market services; third, financial services; fourth, services of social nature, such as educational, cultural, sports and entertainment services, Eurostat (Table 4).

Table 7. Increase in the output of knowledge-intensive services in Zemgale region municipalities in the period 2009- 2015

Group	The knowledge-intensive services	2009	2015	Growth
1	High-tech knowledge-intensive services	38	135	3.6x
2	Knowledge-intensive market services	135	643	4.0x
3	Knowledge-intensive financial services	27	61	2.3x
4	Other knowledge-intensive services	80	778	9.7x
	Together	280	1617	5.8x

Source: authors' calculations based on Lursoft data

In the period of analysis, the number of HT and MHT enterprises almost doubled, while the number of providers of knowledge-intensive services grew at a considerably higher rate. Their number in Zemgale region rose almost

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six times. The maximum increase occurred in the segment of social services, which includes education, healthcare and leisure-time spending activities.

Since the 1st group of services is the one that is directly associated high technology and high knowledge intensity, while the 2nd and 3rd ones represent support service activities, the authors performed an analysis of the internal structure of knowledge-intensive services and of trends in structural change. The analysis of the data for the municipalities of Zemgale region revealed two not very positive results. First, in 2009, the first three groups of services comprised 71.4% of the total share of knowledge-intensive services, while the 4th group made up only 28.6%. However, in 2015, the first three groups accounted for only 51.9% of the total share of knowledge-intensive services, while the 4th group of services increased its share to 48.1.%.

Referring back to the perspective of vertical growth, one can find that in the period 2009-2015, the share of the first three groups of knowledge-intensive services rose 4.2 times, while the number of providers of 4th group services rose 9.7 times. To assess the vertical and structural changes, the authors decided to perform one more calculation. Jelgava municipality was the only one where no high and medium high technology enterprises were reported in 2009. Until 2015, five such enterprises emerged, and part of them demonstrated an increase in net turnover, i.e. they were successful. The distribution of knowledge-intensive services by group in Jelgava municipality in 2009 and 2015 was as follows:

- 1 group - 2009 -----17.2%; 2015 ------17.1%;
- 2 group - 2009 ---- 55.2%; 2015 ---- 57.1%;
- 3 group – 2009 ---- 6.9%; 2015 ---- 1.4%;
- 4 group - 2009 ---- 20.7%; 2015 ---- 24.4%.

The distribution of knowledge-intensive services did not change significantly.
Proportion of 1 – 3 group 2009 - -- 79.3%; 4 group ---- 20.7%
1 – 3 group 2015 ---- 75.6%; 4 group ---- 24.4%
It has to be concluded that in Jelgava municipality knowledge-intensive services (main ones and support service activities) maximally contribute to the knowledge-economy. In further research, of course, it has to be made clear whether this is an exception or an indication of interrelation between the two segments of a knowledge-based economy and how significant it is. Prerequisites for the successful entry of the KBE segment are the availability of both tangible and intangible capital. Intangible capital, more generally, knowledge capital should be such an important driver of modern economic growth (Corrado et al. 2006; Kendiukhov, Tvaronavičienė 2017). An analysis of the indicators of Zemgale region's municipalities showed that depopulation did not directly correlate with a decline in economic activity – the situation was even vice versa. The population in a municipality decreased, while economic activity in it increased. It was observed in most of the region's municipalities (Table 8).

Table 8. Comparison of changes in the population and the number of market sector statistical units per 1000 capita in the period 2009-2015 (in %-points)

1. Significant increase in the population Ozolnieki (+3.9) Significant increase in economically active statistical units Bauska (+88.5), Iecava (+107.69), Jaunjelgava (+74.36), Nereta (+65.12), Ozolnieki (+64.3), Plavinas (+76.5), Rundale (+114.3), Skriveri (+116.13), Vecumnieki (+117.2)	**2.** Above-average decrease in the population Iecava (-4.5) Above-average increase in economically active statistical units Aizkraukle (+40.4), Auce (+47.4), Dobele (+42.2), Jekabpils (+11.7), Jelgava (+29.5), Koknese (+47.8), Tervete (+40.4), Viesite (+32.8)
3. Below-average decrease in the population Aizkraukle (-9.56), Akniste (-8.85), Bauska (-8.48), Dobele (-8.0), Jaunjelgava (-6.3), Jelgava (-7.6), Koknese (-5.5), Krustpils (-6.6), Rundale (-9.5), Sala (-8.8), Skriveri (-7.4), Vecumnieki (-8.4) Below-average increase in economically active statistical units Krustpils (+10.8), Salas (+1.26)	**4.** Significant decrease in the population Auce (-11.6), Jekabpils (-11.7), Nereta (-10.1), Plavinas (-10.7), Tervete (-10.4), Viesite (-10.6) Insignificant increase in economically active statistical units Akniste (-2.9)

Source: authors' calculations based on LURSOFT data

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The survey of experts representing the regions focused on the skills of local governments to perform not only administrative functions but also actively implement the role of the leader of a community, mobilising residents for the multifaceted enhancement of their common life space. Smart growth is possible only if local residents are ready for change in their economic and social life and in the surrounding environment (Rivza et al. 2016; Kruzmetra, Rivza 2015). Logically, a need emerges to perform a further in-depth examination of the entire range and variations of local government activities done to maximally contribute to the viability of local space, engaging residents in the formation of a smart territory. The public has to accept the truth that the 21st century is a period of fast change, and it equally relates to urban and rural territories (Kruzmetra 2011).

Conclusions

1. Upward trends in economic processes were observed in Latvia as a whole in the period of analysis. The growth of entrepreneurship took place both in the cities of national significance and rural areas consisting of 110 municipalities; besides, the growth was faster in the rural areas than in the cities. This is, of course, a positive trend. The knowledge-based economic segment grew faster than the whole economy did. If taking into consideration the deterioration of the Global Competitiveness Index for Latvia and the fact that the country lagged behind the other Baltic States, the growth pace has to be regarded as insufficient.
2. At regional level, economic growth in the national economy as a whole was observed in all the regions, and the growth in all the regions was higher than that in the cities. However, the growth trends began differing. Higher growth rates both in the whole economy and in the knowledge-based economic segment in terms of numbers of enterprises and employees were reported in Pieriga region, which were higher than those in the cities. Knowledge-based services maximally contributed to this trend in the region, as the proportion of the services in the KBE segment in Pieriga region was the highest among the regions. However, a comparison of increases in net turnover per employee in the whole economy and in the knowledge-based economic segment in the regions revealed that the highest increase was reported in Kurzeme region, which makes us consider that the new economic pattern in this part of Latvia yields higher returns. This implies that when promoting an increase in the knowledge-based economic segment, the focus has to be placed on quality instead of quantity.
3. The research clearly showed that an analysis of progress in smart growth and the viability of rural space at regional level does not yet provide the real implementation of the local approach strategy, as municipalities within a region differed in a number of essential indicators. First, there were differences in the proportion of economic segments between manufacturing or agriculture and forestry, as the segment of services dominated in any municipality. Second, there were internal differences in the KBE segment, which was represented by only knowledge-based services or by both the mentioned services and products produced by HT and MHT enterprises that made a greater financial contribution than service providers. Municipalities currently focus on knowledge-intensive services, less focus is placed on high-tech and medium-high-tech manufacturing industries. A logical question arises – how to solve this problem.
4. The research findings made during the present research make the authors focus on the effects of intangible capital on the vitality and viability of rural areas in their future research in order to make progress towards the formation of smart space, as communities build capacity for smart growth with the public, private and non-profit sectors.

Recommendations – proposals

1. With regard to scientific research:

The current research results mostly give an opportunity to describe what occurs, where it occurs and how fast it occurs. However, it is more important to find answers to the following questions – why it occurs particularly in this territory, is it sustainable and how it affects the viability of rural space? Therefore, the started research direction has to be continued, seeking answers to such questions as:

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--what are the determinant factors for the growth of economic activity if there is economic growth and, at the same time, depopulation in a territory;
- what are the most appropriate economic development directions for a knowledge-based economy in the rural space, which would give an opportunity to mobilise the resources of the territory and use the latest technologies in order to move towards a bioeconomy and a circular economy;
-what could be the most profitable niche products for entering the global market because the domestic market is constrained.

2. With regard to practical activity:
   - to expand cooperation with scientists of other countries in order to identify best practices for maintaining the viability of rural areas and to seek new ways of tackling the problem;
   - expand cooperation among scientists and the "growth agents" of rural space through the exchange of opinions and discussion, which would give a cognitive vision of the on-going processes in the rural space;

Politicians, government officials as well as rural residents do not follow findings in scientific publications, while statistical publications provide information only about regions and not local territorial units – municipalities –, which the rural space of Latvia is comprised of. The information is necessary for the development of a smart growth strategy and the implementation of it in practice, and the information could be provided by research studies.

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