

Through Economic Growth to the Viability of Rural Space

B. Rivza^{1,*}, M. Kruzmetra¹ and V. Zaluksne²

¹Latvia University of Agriculture, Faculty of Economics and Social Development, Economics and Regional Development Institute, 9 Svetes street, LV-3001 Jelgava, Latvia

²Latvian Academy of Sciences, Division of Agriculture and Forestry Sciences, Akademijas laukums 1, LV 1050 Riga, Latvia

*Correspondence: baiba.rivza@llu.lv

Abstract. Rural areas as a living space for the population has been increasingly explored in official documents of various EU institutions and in research topics. 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 readiness of residents for active and innovative economic activities. The paper presents an analysis of vertical and horizontal changes in entrepreneurship in the period of 2009–2015 and their effect on changes in the living space of the analysed territories in Latvia's regions. The processes in administrative territories of regions, municipalities were analysed, 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. The data of LURSOFT for the period of 2009–2015 and the Central Statistical Bureau for the period of 2013–2015 were used as the sources of information. The data were processed by quantitative (growth) and qualitative (structural change) statistical analysis methods. The Eurostat methodology and the 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 used for an in-depth examination of the research results. The research results showed that, in spite of the global economic crisis, both vertical growth and positive horizontal change took place in the national economy of all five regions of Latvia, nine cities of national significance as well as all 110 municipalities that composed the rural areas of Latvia. The authors arrived at the conclusion that, first, performance trends contributing to economic growth were observed in the rural space; second, there was no direct causal relationship between the population density and economic activity in the rural territories; third, 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 activities.

Key words: living space, structural changes, knowledge-based economy, local governance, local community.

JEL codes: P25, R11

INTRODUCTION

In the last decade, prospects for national development of Latvia have been in the focus of attention for several times. On June 10, 2010, the Saeima approved the Sustainable Development Strategy of Latvia until 2030 'Latvia 2030' (Latvia 2030,

2010). Two years later, a new policy document, the National Development Plan 2014–2020, was adopted by the Saeima on December 20, 2012 (NAP, 2012). One of the most essential objectives was to reach the level of the EU Member States in all the areas of life, primarily, in the economic development, which functions as an important tangible factor for smart growth (Bacon & Brewin, 2008). The question remains: what is the progress in achieving the aims?

In terms of an area and the population of the rural 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 the rural area accounts for 40.2% and intermediary territories account for 43.6%. 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 the numbers are 22.2% and 27.0% (CAP Context..., 2016 update), respectively. 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 data for Latvia in Global Competitiveness Index do not show any improvement. On the contrary, a drop was observed (49th place in 2016/2017 instead of 44th in 2015/2016) which is the worst result among the three Baltic States (The Global Competitiveness..., (2016). For this reason, since 49.2% of the total population of Latvia live in 110 municipalities of rural areas, a topical problem for researchers is the promotion of viability of the rural space 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 the role of a knowledge-based economy in the mentioned processes. Rural vitality and viability have 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 the 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) Besides, 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 social well-being, and improve community viability (Bearden et al. (without a year); Ricketts & Place, 2009). Economic activities play a significant role in both vitality and viability. 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 (Grigsby, 2001; Sott, 2010). Creative and diversified economic activities have to be promoted, because they contribute to employment and make a territory more populated. Integrated economic sectors and strong local economies are necessary (Bacon & Brewin, 2008; The Rural..., 2010; Naldi et al., 2015). There are three priorities in the field of economic development: 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 have 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, The Measurement..., 2005).

The aim of the research: to assess vertical and horizontal changes in entrepreneurship in the period of 2009–2015 with 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/ rural municipalities, local administrative units of the regions of Latvia.

LURSOFT data for the period of 2009–2015 and the Central Statistical Bureau data for the period of 2013–2015 were used as information sources. The data were processed by quantitative (growth) and qualitative (structural change) statistical analyses and development level-rate matrix methods.

RESULTS AND DISCUSSION

Vertical changes in entrepreneurship in the period of 2009–2015

The analysed period was complicated. It involved both the economic crisis and the 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 stating 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 (HT), medium high-tech (MHT) factories and knowledge intensive services (HT, MHT, KIS) (European Commission, 2008).

The comparison of the key indicators of entrepreneurship (the number of enterprises, the number of employees and the net turnover) both in the cities of national significance and in 110 municipalities shows trends in entrepreneurship in the period of six years (Table 1).

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

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

Source: the 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 the national level and in rural territories with regard to entrepreneurship as a whole and the KBE ('Knowledge-based entrepreneurship') segment. However, the growth of the KBE segment both in the cities and in rural territories considerably exceeded an increase of 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, moved 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.

The overall situation in Latvia is important, but only for the 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 of the territorial units or reveal how successfully the spatial aspect of cohesion is being implemented.

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 (Table 2). 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.

Table 2. Growth of entrepreneurship in the regions in the period of 2009–2015 (vertical growth, % 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: the authors' calculations based on LURSOFT data.

Horizontal changes in entrepreneurship in the period of 2009–2015

Horizontal changes in entrepreneurship as a whole reflect not only the size of any particular segment but also its influence. The increasing number of enterprises in a segment provide additional work places for people. In addition, if a significantly greater

proportion of net turnover of the segment is in the total net turnover, the segment's problems receives additional attention in the economic development strategy. The trends may be positive and negative.

Table 3. Similarities and differences in segmental restructuring processes in the regions in the period of 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)						
Number of enterprises	+1.78	-0.93	+0.01	-8.12	-0.9	-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	+0.4	-5.79
Knowledge-based economic segment						
Number of enterprises	+4.08	+6.54	+2.72	+0.99	+2.9	+5.47
Number of employees	+0.14	+2.28	+0.26	+1.2	+5.4	+3.30
Net turnover	-1.10	-3.77	+0.29	-0.26	-0.6	+0.21

Source: the 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 preservation of rural vitality is of great importance due to the decrease of the population, the long distance from the capital city of Riga and the region's location close to the border. Second, the growth of the KBE segment was quite noticeable. In all the regions and cities, an increase in the proportion of this segment took the form of an increase in both the number of enterprises and the number of employees. Unfortunately, the proportion of the 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 an 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. There is a global trend that the so-called gentrification process intensifies due to the movement of competent and wealthy individuals to peri-urban territories with the purpose to live in the favourable natural

environment and do distance work or provide knowledge-intensive services on the Internet at the place of residence (Kruzmetra, Z., 2011).

A negative trend is a decrease in the proportion of manufacturing, although it is an economic segment that considerably contributes to the added value 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 the results of the survey, manufacturing took the 2nd place in providing jobs (21.86% of the total employees) right behind the segment of services (53.8%); it should be noted that employment and incomes are among the key factors contributing to retaining population in rural areas (Bacon & Brewin, 2008; The Rural..., 2010). Progress in this segment could be expected if the processing of biological products increases, which is among the strategic objectives of the bioeconomy (Making Bioeconomy..., 2015). Furthermore, 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 the net turnover, although a maximum increase in this particular indicator may be expected.

Vertical and horizontal changes in entrepreneurship in Zemgale region in the period of 2009–2015

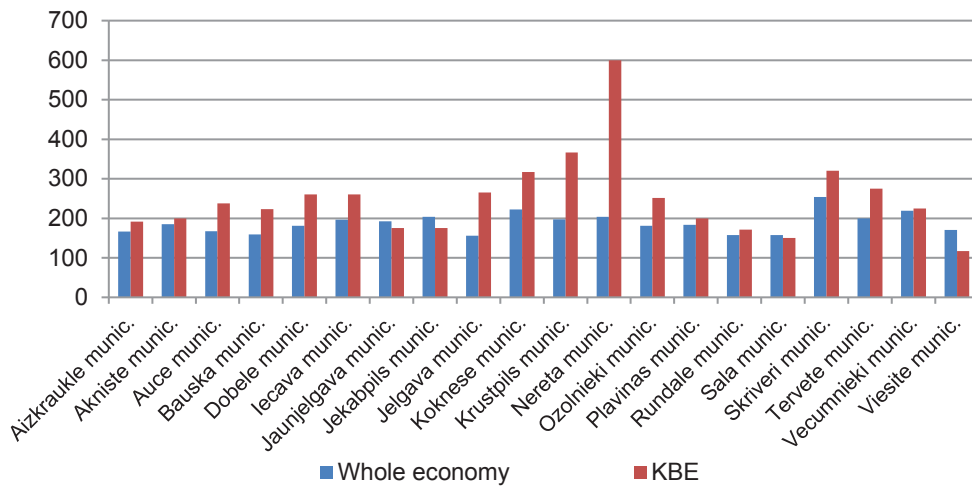
Since official EU documents and research papers increasingly stress the local territory approach (Grigsby, 2001; Janvry & Sadoulet, 2007; Sott, 2010; Making Europe..., 2016), the present research also performed a vertical and horizontal analysis at the regional level. Zemgale region consisting of 20 municipalities was chosen as an example. The research results convincingly showed that disparities of the municipalities in both vertical growth and segmental distribution within the regions are even more pronounced than regional differences. Therefore, an analysis of spatial viability problems in these local territories, which make up the regions, is needed.

The 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 Viesīte), convincingly proving the role of the KBE segment in preserving the vitality of rural areas and, to a greater extent, their viability, which is significantly affected by economic growth (Fig. 1).

The data also show that the key factor of disparities was not the location of a municipality. Thus the municipalities of Nereta (with the greatest increase in the number of employees and the second greatest increase in the net turnover) and Viesīte (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. Consequently, such performance must have been affected by other entrepreneurship influencing factors.

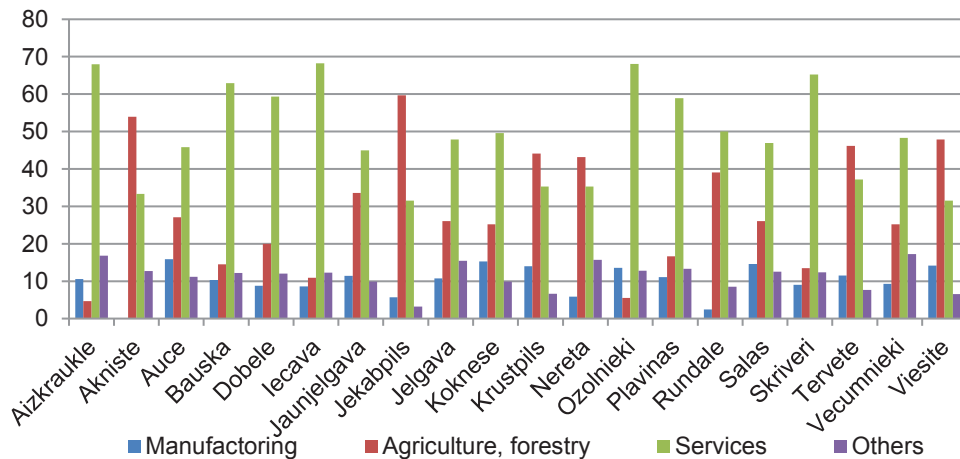
Disparities across municipalities within a region are also indicated by the sizes of segments of entrepreneurship (Fig. 2). Agriculture and forestry is the dominant segment in six municipalities out of the twenty municipalities of Zemgale region: 59.68% in Jekabpils, 53.97% in Aknīste, 47.83% in Viesīte, 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 Aknīste 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 needs of residents for various services, which contributes to maintaining population in the rural space.



Source: the authors' calculations based on LURSOFT data

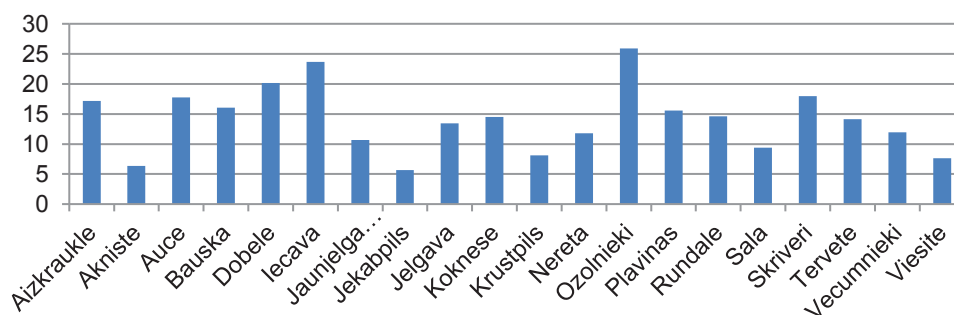
Figure 1. Vertical growth of entrepreneurship in the municipalities of Zemgale region in the period of 2009–2015.



Source: the authors' calculations based on LURSOFT data

Figure 2. Percentage of segments of entrepreneurship in the municipalities of Zemgale region in 2015.

The knowledge-based segment could be singled out from the list of registered enterprises in the LURSOFT database to assess its position and role in the economy of a municipality. The share of the knowledge-based segment ranged from 5.65% (Jekabpils municipality) to 25.9% (Ozolnieki municipality). A share of more than 20.0% was observed in three municipalities, the share in the range of 15.1–20.0% was in five municipalities, the share in the range of 10.0–15.0% was in seven municipalities and the share was less than 10.0% in five municipalities (Fig. 3). Each municipality provided such knowledge-intensive services as educational, health, cultural and sport services. Another point is that recording HT and MHT manufacturing is not easy. Entrepreneurs have to identify niche products that will be competitive in the international market, since domestic demand for innovative products is very insignificant. The research results reveals the complicated nature of this process. 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 lacked there (it vanished after it had 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, as well as the assessment of their performance.



Source: the authors' calculations based on LURSOFT data

Figure 3. Percentage of the knowledge-based economic segment in the economy of Zemgale region municipalities in 2015.

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 an important driver of modern economic growth (Corrado et al., 2006). The category of 'positive local development' was introduced to avoid depopulation (Bacon & Brewin, 2008). 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 just opposite. The population in a municipality decreased, while economic activity in it increased. It was observed in most of the region's municipalities (Table 4).

Table 4. Comparison of changes in the population and the number of market sector's statistical units per 1,000 capita in the period of 2009–2015 (in %-points)

1. Significant increase in the population Ozolnieki (+3.9)	2. Above-average decrease in the population Iecava (-4.5)
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), Skriversi (+116.13), Vecumnieki (+117.2)	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), Skriversi (-7.4), Vecumnieki (-8.4)	4. Significant decrease in the population Auce (-11.6), Jekabpils (-11.7), Nereta (-10.1), Plavinas (-10.7), Tervete (-10.4), Viesite (-10.6)
Below-average increase in economically active statistical units Krustpils (+10.8), Salas (+1.26)	Insignificant increase in economically active statistical units Akniste (-2.9)

Source: the authors' calculations based on LURSOFT data.

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 a 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). Consequently, there is a need 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 the local space engaging residents in the formation of the smart territory. The public has to accept the truth that the 21st century is a period of fast change, besides, it equally refers to both urban and rural territories (Kruzmetra, M., 2015).

CONCLUSIONS

1. Upward trends in economic processes were observed in Latvia on the whole in the period of the research. The growth of entrepreneurship took place both in the cities of national significance and in 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 total economy did. If taking into consideration the drop 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 a regional level, economic growth in the national economy as a whole was observed in all the regions, and the regional growth was higher than that in the cities. However, the growth trends began to differ. Higher growth rates both in the total economy and in the knowledge-based economic segment in terms of numbers of enterprises and employees were reported in Pierīga region, which were higher than those

in the cities. Knowledge-based services 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, the comparison of increases in the net turnover per employee in the total 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 a regional level does not yet provide 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 among 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 only by 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 in relation to the vitality and viability of rural areas in their future research in order to make progress towards the formation of a smart space, as communities build capacity for smart growth with the public, private and non-profit sectors.

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REFERENCES

- Bacon, B. & Brewin, D. *Rural Community Viability: Lessons from 4 Communities*. University of Manitoba, Canada. <http://www.ruralsupport.ca/admin/FileUpload/files/publications/Oct08RuralViability.pdf> [05.05.2017].
- Bearden, Ch., Cruz, N., Heinsohn, H., Kuzaro, J., Norton, K., Richardson, W. & Wood, M. 2004. *Rural Viability Index: A Tool for Assessing Rural Communities*. The Bush School of Government & Public Service, Texas A&M University: http://bush.tamu.edu/psaa/capstones/projects/ORCA_Capstone.pdf [10.05.2017].
- CAP Context Indicators 2014–2020. 2016 update. Agriculture and Rural Development. https://ec.europa.eu/agriculture/sites/agriculture/files/capindicators/context/2016/indicator-table_en.pdf [03.05.2017].
- Corrado, C.A., Hulten, Ch.R. & Sichel, D.E. 2006. *Intangible Capital and Economic Growth*. Working Paper 11948, National Bureau of Economic Research, Cambridge. <http://www.nber.org/papers/w11948.pdf> [19.04.2017].
- European Commission. 2008. NACE Rev. 2. *Statistical classification of economic activities in the European Community*. Eurostat, pp. 363. <http://ec.europa.eu/eurostat/documents/3859598/5902521/KS-RA-07-015-EN.PDF> [12.02.2017].

- European Commission, 2010. *Europe 2020: a European Strategy for Smart, Sustainable and Inclusive Growth*. Brussels. [http://ec.europa.eu/eu2020/pdf/COMPLET_EN_BARROSO_007 – Europe 2020 – EN version.pdf](http://ec.europa.eu/eu2020/pdf/COMPLET_EN_BARROSO_007_Europe_2020_EN_version.pdf) [13.05.2017].
- EUROSTAT 2008 NACE Rev. 2. *Statistical classification of economic activities in the European Community. Luxembourg: Office for Official Publications of the European Communities*. <http://ec.europa.eu/eurostat/documents/3859598/5902521/KS-RA-07-015-EN.PDF> [14.05.2017].
- Grigsby, W.J. 2001. Community vitality: Some conceptual considerations. *Rural Development Paper No. 6*. The Northeast Regional Center for Rural Development, The Pennsylvania State University. <http://aese.psu.edu/nercrd/publications/rdp/rdp6.pdf> [14.05.2017].
- Innovative Rural Region. The role of human capital and technology*. 2007. OECD Rural Policy Conferences Key Messages. Caceres, Spain. <https://www.oecd.org/cfe/regional-policy/Innovative-Rural-Regions.pdf> [12.05.2017].
- Janvry, A. & Sadoulet, E. 2007. Toward a territorial approach to rural development. *eJADE Vol. 4, No. 1*, pp. 66–98. <http://www.fao.org/es/esa/eJADE> [15.05.2017].
- Kruzmetra, Z. 2011. *Changes in Rural Settlement Patterns of Peri-Urban Areas of Latvia*. Summary of the Doctoral Thesis for the Degree of Doctor of Geography Subbranch: Human Geography, Riga, LU.
- Kruzmetra, M. & Rivza, B. 2015. Socio-economic Restructuring of Rural Space - Feature of 21st Century. *Socialiniai tyrimai* **1**(37), 67–74.
- Latvija 2030*. Sustainable Development strategy of Latvia until 2030 /Latvijas ilgtspējīgas attīstības stratēģija līdz 2030/ 2010. SAEIMA OF THE REPUBLIC OF LATVIA (in Latvian) http://www.latvija2030.lv/upload/latvija2030_saeima.pdf [12.05.2017].
- Making Bioeconomy Work for Sustainable Development*. 2015. Global Bioeconomy Summit, Berlin, November 26th 2015. http://gbs2015.com/fileadmin/gbs2015/Downloads/Communique_final_neu.pdf [15.05.2017].
- Making Europe Grow With its Rural Territories*. 2016. Contribution to a European Rural Agenda post 2020. R.E.D. www.ruraleurope.org [15.04.2017].
- Nacional Development Plan of Latvia for 2014–2020* /Nacionālās attīstības plāns (NAP)/. Approved by a Decision of the Saeima on 20 December 2012. (in Latvian) <http://polsis.mk.gov.lv/documents/4247> [20.05.2017].
- Naldi, L., Nilsson, P., Westlund, H. & Wixe, S. 2015. What is smart rural development? *Journal of Rural Studies* **40**, 90–101.
- OECD 2005. *The Measurement of Scientific, Technological and Innovation Actions*. 3rd ed. http://www.oecd-ilibrary.org/science-and-technology/the-measurement-of-scientific-technological-and-innovation-activities_24132764 [26.05.2017].
- Ricketts, K.G. & Place, N.T. 2009. Making Communities More Viable: Four Essential Factors for Successful Community Leadership. *Journal of Extension* Volume 47, Number 2, *Article #21AW2*. <https://www.joe.org/joe/2009april/iw2.php> [13.05.2017].
- Rivza, B., Kruzmetra, M. & Zaluksne, V. 2016. Performance trends for smart growth in the rural territories of Latvia. *Agronomy Research* **14**(5), 1684–1693.
- Sott, K. 2010. *Community vitality*. A report of the Canadian index of wellbeing. Canadian Council on Social Development (CCSD) <http://www.unesco.org/fileadmin/MULTIMEDIA/HQ/CLT/pdf/communityvitalitydomainreport.pdf> [15.05.2017].
- The Global Competitiveness Report, 2016/2017*. 2016. World Economic Forum. <file:///E:/Desktop/Dati/Global%20Competitiveness%20Report%202015-2016%20-%20Reports%20-%20World%20Economic%20Forum.htm> [12.05.2017].
- The Rural Challenge*. 2010. Achieving sustainable rural communities for the 21st century. The Rural Coalition, London. <http://www.rtpi.org.uk/media/6331/the-rural-challenge-achieving-sustainable-rural-communities-for-the-21st-century-rural-coalition-2010.pdf> [07.05.2017].