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Peripheralisation trends in rural territories: the case of Lithuania

This article describes the main trends in the changes to the system of rural settlements in Lithuania and determines the regional peculiarities of these changes. The analysis was carried out using data collected during the censuses of 2001 and 2011, and information that was gathered during field trips to rural settlements across the country in 2013 and 2014. Our analysis showed that the population decreased in the majority of settlements independently of their size. However, distinct regional differences can be identified and these were especially evident when comparing the data collected from the rural settlements located close to the capital city (Vilnius) or regional centres (Kaunas, Klaipėda, Šiauliai, Panevėžys and Alytus) with the data collected from the peripheral areas located further from cities or roads of regional importance. The survey showed that the north-eastern and southern parts of Lithuania are depopulated most, whereas in the western part of the country the number of residents was stable until 2000, and only in the 21st century did it start to decrease due to the increasing emigration rates. Also, the analysis of the structure of settlements allowed us to point out the historical circumstances as the cause of regional differences. In the north-eastern part of Lithuania the settlements are smaller than in the western part of Lithuania. The analysis shows that the increasing importance of the centre-periphery factor will further determine the decline of rural settlements in peripheral territories in Lithuania.

Keywords: peripheralisation, rural settlements, rural regions, depopulation

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Introduction

In recent years, territorial trends in Europe have led to an intensification of polarisation, and this trend is especially clearly distinguishable in the post-socialist Member States of the European Union (EU) (Lang, 2011). Polarisation is clearly seen when the capital city and several bigger cities are rather intensively growing, whereas the territories that are located outside their economic hinterlands are characterised with constant decline. Tendentiously increasing economic and social differences between the regions allow us to assume that territorial polarisation will increase conditioning peripheralisation of non-metropolis territories.

The depopulation of rural territories of Lithuania has already been occurring for more than half a century (Kriauciūnas, 2010; Daugirdas *et al.*, 2013). After the restoration of independence in 1990 the depopulation processes even intensified; however, still around 33 per cent of the population of Lithuania live in the rural territories. At the end of the 20th century the Soviet Union collapsed and Lithuania not only became politically independent but also switched from a planned to market economy. However, the *kolkhoz* settlement structure, which has been rapidly changing in recent years due to the lack of workplaces, is still similar to the one that was formed in the Soviet period. The importance of the traditional activities of rural areas (e.g. agriculture, forestry and fisheries) is in constant decline.

The purpose of the article is to show the main trends in the changes to the system of rural settlements in Lithuania and to determine the regional peculiarities of these changes. In order to achieve this, several tasks were set. Firstly it was necessary to describe the trends in the main demographic and socioeconomic indicators during the last fifteen years. Secondly, attention was paid to location and distance issues. The third step was the analysis of the situation in the rural territories of Lithuania and this was carried out in the context of the changes in the sizes and locations of rural settlements.

Regional disparities in depopulating territories in post-socialist countries in Europe

Smith (1996) stressed that in order to forecast the development of a region, it is firstly necessary to look into its past. The historical heritage and the changes in the settlement system are especially evident in Central and Eastern European¹ (CEE) countries. The weakness of the regions or the currently ongoing processes of degradation of the settlement network in CEE countries depend on historical circumstances (Farago, 1999; Bihari and Kovács, 2006; Timár and Kovács, 2009). The socioeconomic changes in the CEE countries started at the end of the 20th century when they emerged from a period of domination by the Soviet Union.

Many researchers (e.g. Becker and Bloom, 1998; Krisjane, 2001; Sobotka *et al.*, 2003; Nagy, 2005; Nagy, 2006; Burneika *et al.*, 2013; Otto and Chmielewska, 2014) claim that the growth of territorial imbalances and the degradation of networks of settlements in the CEE countries are consequences of the transition period. When switching from a planned to a market economy, power was given to entrepreneurs (Scott and Storper, 2003), as entrepreneurship was thought to be the engine that would lift the country to a higher economic level. However, although business has been allowed its freedom, insufficient thought has been given to the consequences of capitalism for the regions. The transition period saw an increase in the growth of capitals and other big cities while the rural settlements have depopulated and degraded. This growing territorial polarisation has led to increased attention being paid to lagging regions (Czyz, 2002; Grossmann *et al.*, 2008; Pallagst, 2010; Reckien and Martinez-Fernandez, 2011; Lang, 2011, 2012). The researchers underline the negative polarisation trends, stressing that such territorial unevenness results in the emergence of areas of growth and stagnation.

¹ We use CEE to mean the post-socialist countries of central and eastern Europe that did not belong to the Commonwealth of Independent States.

However, the processes of depopulation and changes in the network of settlements in post-socialist countries were not unexpected and stand as the natural process. The demographic and socioeconomic problems in CEE countries occur in all territorial units but, with the growing inequality between centres and peripheries (Raagamaa, 1996, 2003; Churski *et al.*, 2014), they most strongly affect the peripheral rural territories (Amcoff and Westholm, 2007). The strong urban centres rapidly grow together with the rural territories around them that serve as residential places for higher-incomes residents, whereas the remote agricultural rural regions and big industrial centres from Soviet times continue to decline.

This article aims to add to the body of literature that shows the ongoing changes in the post-socialist countries of Europe. The information it contains draws attention to the declining (and even disappearing) system of settlements and the increasing peripheralisation process in Lithuania.

Methodology

Lithuania is divided into 60 LAU1 regions (municipalities or *savivaldybės*), of which six are city (urban) municipalities (Vilniaus, Kauno, Klaipėdos, Šiaulių, Panevėžio and Alytaus) and 54 include both urban (towns) and rural territories².

This article focuses on rural territories. The term *rural territory (settlement)* is not clearly defined in Lithuania. The law and researchers use this term in various ways. Here we use the definition of rural territories provided by the Republic of Lithuania Law on the Territorial Administrative Units of the Republic of Lithuania and Their Boundaries (Republic of Lithuania, 1994). The statistical information that is collected by Statistics Lithuania is also based on this definition. According to the law, small towns (fewer than 3000 inhabitants), villages and steadings, i.e. residential territories having no characteristic features of city or town, are attributed to rural residential territories. Rural territories cover 97.4 per cent of Lithuania's territory (Nacionalinė žemės tarnyba, 2013). According to the population census of 2011³, there were 20,940 rural settlements in Lithuania. Therefore, rural settlements account for over 99 per cent of all settlements (including cities and towns), but only around 33 per cent of the population, of Lithuania.

The results section consists of three parts that were prepared using different methodologies. The first part shows the fluctuations in the average values of the main demographic and socioeconomic indicators in Lithuania during the last fifteen years. This part has been prepared using data that were provided by Statistics Lithuania⁴.

The second part presents the accessibility situation that appears in Lithuania when combining time and location questions. By adapting the methodology that was developed by European authors (Schurmann and Spiekermann, 2006; Dijkstra and Poelman, 2008; Jonard *et al.*, 2009), the periph-

eral regions in Lithuania were identified. The model is based on just two components: settlement network (especially bigger cities) and car travel times. Cities where the population exceeds 50 thousand was considered as centres of attraction. This threshold was chosen because cities of such size can offer a wider selection of jobs, higher education, specialised health institutions, supermarkets and various services (Schurmann and Spiekermann, 2006; Dijkstra and Poelman, 2008). Following this approach, the six biggest cities in Lithuania – Vilnius, Kaunas, Klaipėda, Šiauliai, Panevėžys and Alytus – meet the definition of a centre of attraction. Therefore, the accessibility of these cities by car within a certain time was analysed using ArcGIS software. According to Dijkstra and Poelman (2008), who analysed remote rural territories in the EU, the optimal accessibility time by car to the regional centre should not exceed 30 minutes, although accessibility time up to 45 minutes was considered to be relatively good. Therefore, a 45 minutes limit was used as a criterion to distinguish remote rural territories. Meanwhile, those regions from which it takes more than an hour to reach the centre of attraction by car are considered to be 'extremely peripheral' (Tóth, 2006).

Using the same analysis principle, accessibility was estimated at a different scale: the accessibility by car of the centres of the 60 municipalities. This analysis made it possible to identify the places in Lithuania that were lagging even within the territory of the municipality. In accordance with Jakimavičius and Burinskienė (2007), the assumption was made that the informal limits of the centre were defined by the accessibility of the administrative centre by car within 15 minutes. Meanwhile, the locations from which it took more than 35 minutes to reach the centre of the municipality were designated as peripheral. We recognise that these models do not take into account the effects of traffic jams or flows of cars, but they provide general and sufficiently accurate information concerning Lithuania.

The third, main, part of the article shows the changes and transformations of the network of rural settlements in Lithuania during the period 2001-2011. Our analysis and the information in the Figures were based on the 2001 and 2011 population and house census data provided by Statistics Lithuania⁵. In order to prepare the comparative analysis and to determine the regional disparities, and to show the trends evident in the changes, we compiled a database of all 20.9 thousand Lithuanian rural settlements. From the database and the information collected during the field trips organised in 2013 and 2014, we were able to count the population change even in the smallest settlements. We were also able to look deeper into the social features: age structure, possibility to find a job, ability to be mobile and work in places other than the place of residence. The collected data led us to exclude the most vulnerable settlements where there were only a few residents left and even to identify the settlements that were left without inhabitants. The changes in the network of Lithuanian rural settlements were analysed on the bases of the changes in the number of residents that occurred in particular settlements.

² The other territorial levels in Lithuania are ten NUTS3 regions (*apskritys*), and LAU2 wards.

³ Available from <http://osp.stat.gov.lt/en/2011-m.-surasymas>
⁴ <http://www.stat.gov.lt/en/home>

⁵ <http://osp.stat.gov.lt/en/2011-m.-surasymas>

Results

Fluctuations in the main demographic and socioeconomic indicators in Lithuania

In the post-reform period in Lithuania, demographic and socioeconomic changes were closely connected with periods of economic boom and recession. Since 1996 the number of inhabitants has constantly decreased (Figure 1). Lithuania lost around 20 per cent of its inhabitants during this period, and currently the total population does not exceed three million. The main causes of population decline are high emigration and low fertility rates.

The average population density of Lithuania was 55.4 inhabitants per km^2 in 1996, 53.8 inhabitants per km^2 in 2000, 52.1 inhabitants per km^2 in 2006, and 46.1 inhabitants per km^2 in 2012 (Figure 1). The population density decreased at different rates across Lithuania: a notable decline in inhabitants occurred in the infertile and exceptionally natural but economically weak areas or border regions but the most rapid depopulation was in urban territories (Kriauciūnas, 2010).

The number of inhabitants in the rural areas has also decreased. Between 1996 and 2012 the rural territories in total in Lithuania have lost 15.6 per cent of their population. In 1996 the population density in the rural territories was 18.1 inhabitants per km^2 whereas in 2000 the figure had decreased slightly to 17.7 inhabitants per km^2 . In 2006 the rural population density did not exceed 17 inhabitants per km^2 and in 2012 the figure was below 16 inhabitants per km^2 (Figure 1).

There was a negative rate of natural population increase (RNI) during the analysed period. This has led to the problem of an ageing population, one that has become particularly acute in the north-eastern and southern parts of Lithuania. Prior to 2000 the RNI did not exceed -1.5‰, whereas after 2000 the rate leapt to -3‰ and still remains highly negative (Figure 1). By contrast, at the beginning of the last decade of the 20th century the RNI was positive (in 1992 it was 3.2‰) but since then it has been constantly decreasing, reaching its lowest rate (-4.0‰) in 2006.

Net migration rates changed during the period under analysis. There was (and still is) a quite intensive emigration process. The last decade of the 20th century was distinguished by a high emigration rate, which showed in the low net migration rates: in 1996 and 1998 average net migration rates in Lithuania were accordingly -6.5‰ and -6.2‰ (Figure 1). The net migration rate increased to -9.5‰ in 2004 but in 2006 emigration decreased and the net migration values were the lowest (-1.4‰) for the entire analysed period. There was however only a short pause before another emigration wave, which peaked in 2010, when the net emigration rate reached -25.2‰ (Figure 1).

During the same period, constant economic growth was noted at national level through foreign direct investment (FDI) and added value created by the employed population. Meanwhile, the unemployment and construction indicators reflected the changing economic situation (Figure 2).

In the middle of the last decade of the 20th century the unemployment rate was relatively low. In 1996 it was 7.1

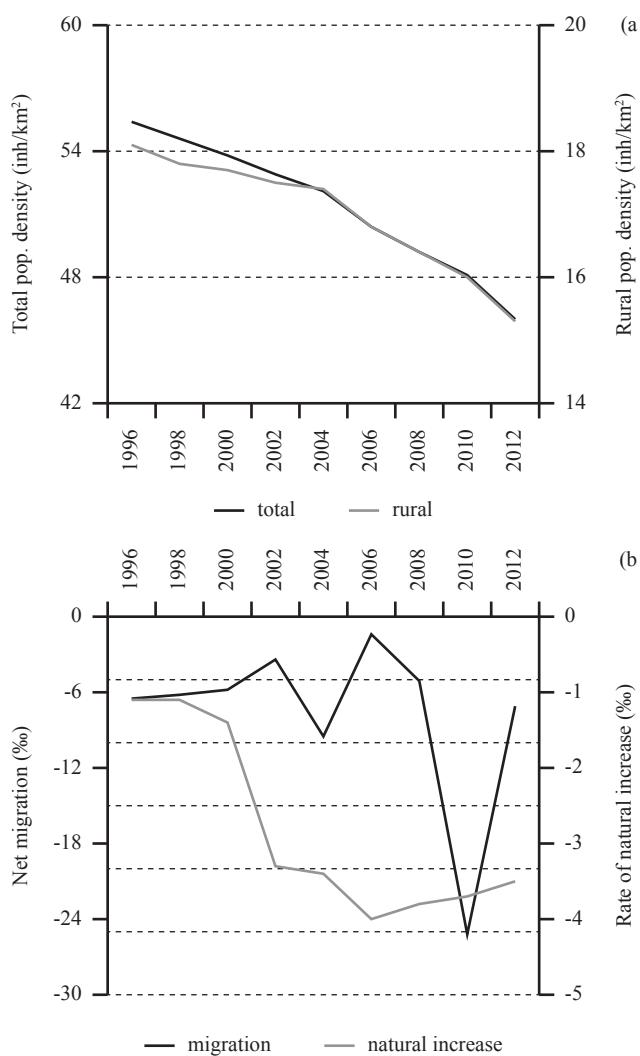


Figure 1: Demographic changes in the post-reform period in Lithuania: (a) population density and (b) net migration and rate of natural population increase.

Data source: Statistics Lithuania

per cent but by 2000 it had reached 16.4 per cent. In the first years of the new millennium it steadily decreased until 2006, when it reached 3.4 per cent. After 2006, the rate again increased to a peak of 17.8 per cent in 2010, the highest unemployment rate of the entire post-reform period. The rate then fell slightly to 11.7 per cent in 2012, i.e. similar to the rate in 2004 (Figure 2). These fluctuations of unemployment rate were highly influenced by economic crisis and boom periods (Burneika, 2012).

Since 1996, when FDI statistics were first collected, the sum invested in Lithuania has grown 18 times, from LTL 755 per inhabitant in 1996 to LTL 14,059 per inhabitant in 2012. The amount of money invested and the number of investors still show an increase (Figure 2). Constant growth also occurred in the added value created by the employed population. In fifteen years, values have increased almost fourfold: in 1996 the added value created by the employed population was only LTL 8.2 thousand per inhabitant, whereas in 2012 the average level of this indicator had reached LTL 31.3 thousand per inhabitant (Figure 2).

During the period of analysis, the level of construction activity were varied. Between 1996 and 2004 the num-

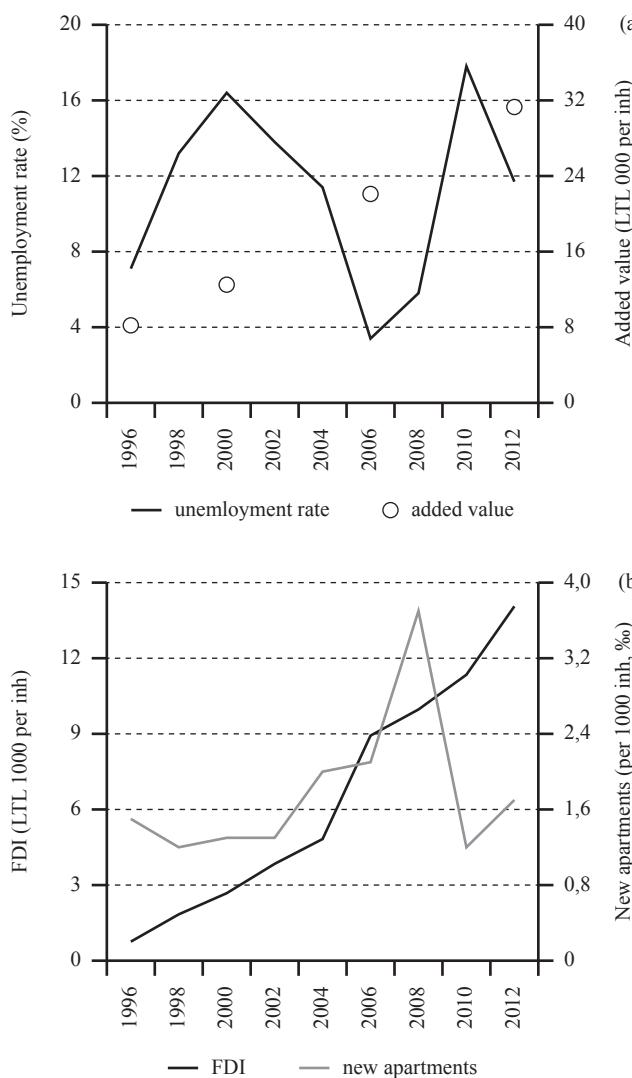


Figure 2: Socioeconomic changes in the post-reform period in Lithuania: (a) unemployment rate and added value created by the employed population, and (b) foreign direct investment (FDI) and new apartments constructed.

Data source: Statistics Lithuania

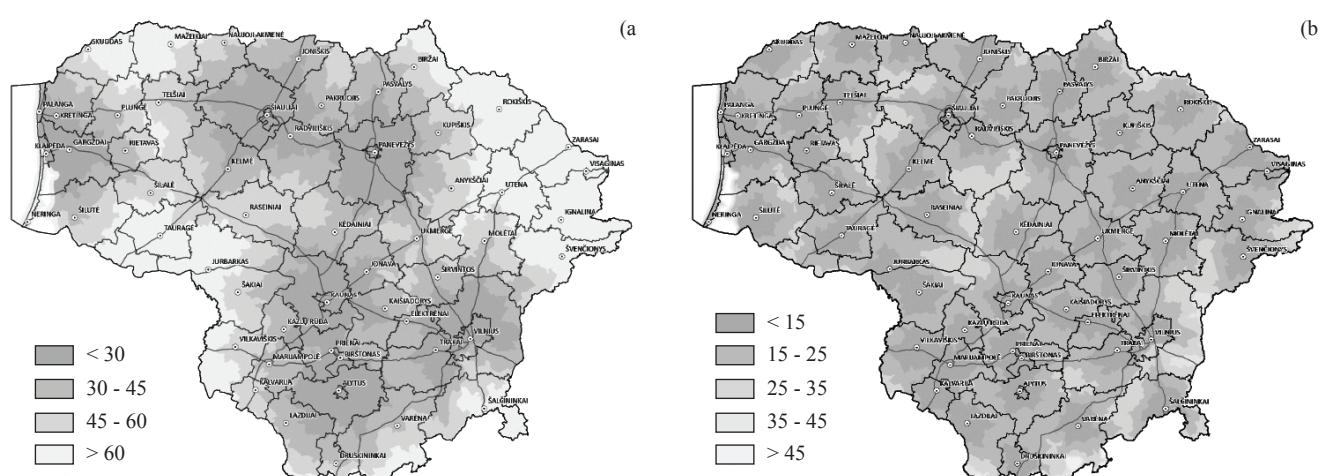


Figure 3: Accessibility by car in terms of time to (a) regional centres in Lithuania and (b) the administrative centres of the districts.

Source: authors' own work based on database of National Land Service

National Land Service under the Ministry of Agriculture of the Republic of Lithuania (2013): GDR250LT. Collection of earth georeference data M 1:250000 for the territory of Lithuania.

ber of new apartments built for every 1,000 inhabitants of Lithuania remained relatively constant and did not exceed the 1996 value of 1.5. After 2004 the rate of construction increased to a peak of 3.7 new apartments per 1,000 inhabitants in 2008. However, during this boom period there were differences between regions. In 2008, the average rate of growth of Lithuania was boosted by high construction rates in the municipalities of city districts (Vilnius, Kaunas and Klaipėda), the rapid growth of suburban areas and the movement of inhabitants to private housing estates around the cities. Meanwhile, the majority of the regions were characterised by low construction rates. After 2008, national construction rates returned to the level that was seen at the end of the 20th century (Figure 2).

Location influence for the peripheralisation

The patterns of the fluctuations in the values of the indicators differ between the municipalities of Lithuania, showing growth in some regions and a rapid decline in others. One of the factors that influences these inequalities is distance: distance from the capital city, distance from the bigger cities, distance from the border, distance from the major roads etc. Even in this world of technology the example of Lithuania, according to our survey, shows that location still plays a great role in territorial development.

In the context of accessibility to the six big cities, the north-eastern, south-western and northern parts of Lithuania were considered as the peripheries of the country, from which it took longest to reach the regional centres (Vilnius, Kaunas, Klaipėda, Šiauliai, Panevėžys and Alytus) (Figure 3a). Meanwhile, in Lithuania it is possible to reach the administrative centre (the centre of municipality) by car rather comfortably and quickly, and this is partially influenced by the good road network in the country. It was possible to note (Figure 3b) that it takes longer to reach the administrative centre in those municipalities that are distinguished by a bigger occupied territorial area, as well in those where the central city was geographically located in the outskirts of the municipality or where there were natural obstacles. It takes more than 25

minutes to reach the administrative centre from only a small part of the territory of Lithuania. Most of the territories from which it takes 35, 45 or more minutes to reach the administrative centre are located in eastern and central Lithuania (Figure 3b).

The relationship between location and peripherality in the different districts of Lithuania was illustrated by statistical information and the results of the field studies and discussions with local residents (see also Kriaučiūnas and Daugirdas, 2013). The rural territories that are more difficult to access are depopulating faster than rural settlements on the outskirts of the bigger Lithuanian cities or the cities that serve as the centres of the district. These inequalities between settlements of different locations according to centre-periphery factor are presented next.

Rural settlement development trends in the 21st century

During the period 2001-2011 the population density decreased in 74 per cent of rural settlements in Lithuania, including 8.1 per cent where the settlements became completely depopulated. In 18.5 per cent of settlements the number of inhabitants increased, while in 7.5 per cent of settlements the population level remained unchanged.

Around the three biggest cities of Lithuania (in the municipalities of Vilnius, Kaunas and Klaipėda districts), where the overall population increased, the rural population increased in 35-40 per cent of rural settlements and decreased in approximately 50 per cent of them (Figure 4). In those settlements in the outskirts of Vilnius, Kaunas and Klaipėda, where the population increased, the speed of growth has exceeded several-fold the speed of population decline in those villages where the population decreased. By contrast, in the peripheral territories in the surroundings of small towns, in those villages where the population increased, the speed of growth was several-fold slower than

the speed of population decline in those villages where the number of population decreased.

The survey showed that the development trends of the settlements depend on both geographical position and the size of the settlement. The speed of depopulation was fastest in the smallest rural settlements, while in the biggest villages (with populations of more than 2000) the population increased. However, it was the case that most of the big rural settlements were on the outskirts of larger cities (Vilnius, Kaunas and Klaipėda).

Spatial distribution trends of occupation of the rural population

The importance of traditional activities of rural territories (agriculture, forestry and fishery) is constantly decreasing. In recent years about 9 per cent of the employed population of Lithuania and about 27 per cent of the employed rural population worked in those sectors (in 1989 56.0 per cent of the employed rural population worked in agriculture and forestry). Therefore, more than 70 per cent of the rural population of Lithuania works in sectors other than farming. It means that rural territories are not anymore the places of residence for farmers and forestry workers only.

In Soviet times a great part of the rural population worked in their settlements of residence or close by. Now it is the opposite: more than 50 per cent of the population of rural settlements works outside their villages. The relationship between the population that works in the settlement where they live and the population that goes to work in other territories depends on the supply of employment in the settlement itself and the location of the settlement with regard to the city system. According to the population census of 2011, more than 50 per cent of the employed population of rural settlements in the municipalities that were in the economic hinterland of big cities (regional centres) worked outside their place of residence. In the remote municipalities

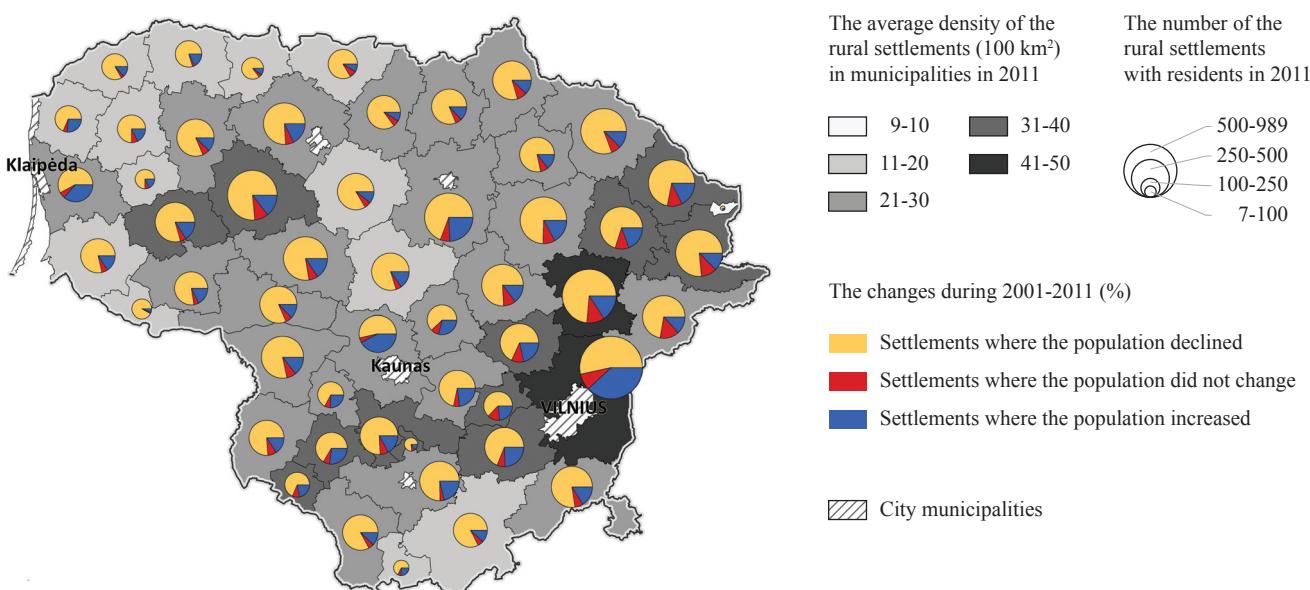


Figure 4: Average density of rural settlements in Lithuanian municipalities in 2011 and changes in the numbers of inhabitants in rural settlements in the period 2001-2011.

Source: authors' own work based on Census data of Statistics Lithuania

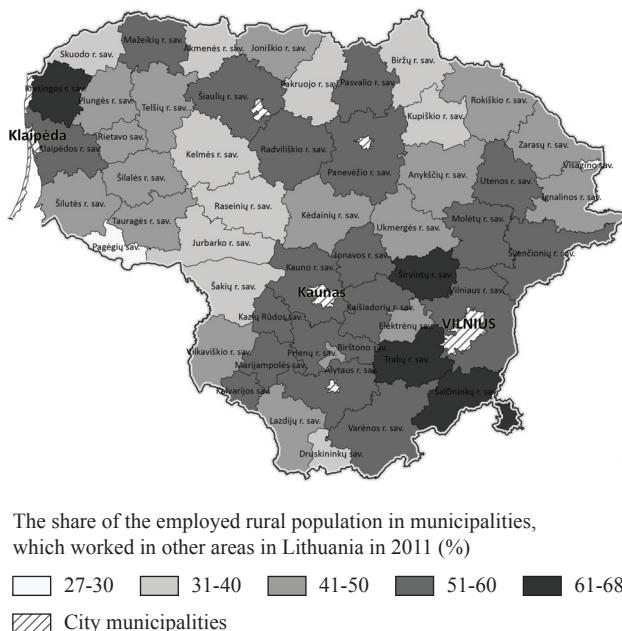


Figure 5: Spatial distribution of rural residents according to their working place.

Source: authors' own work based on Census data of Statistics Lithuania

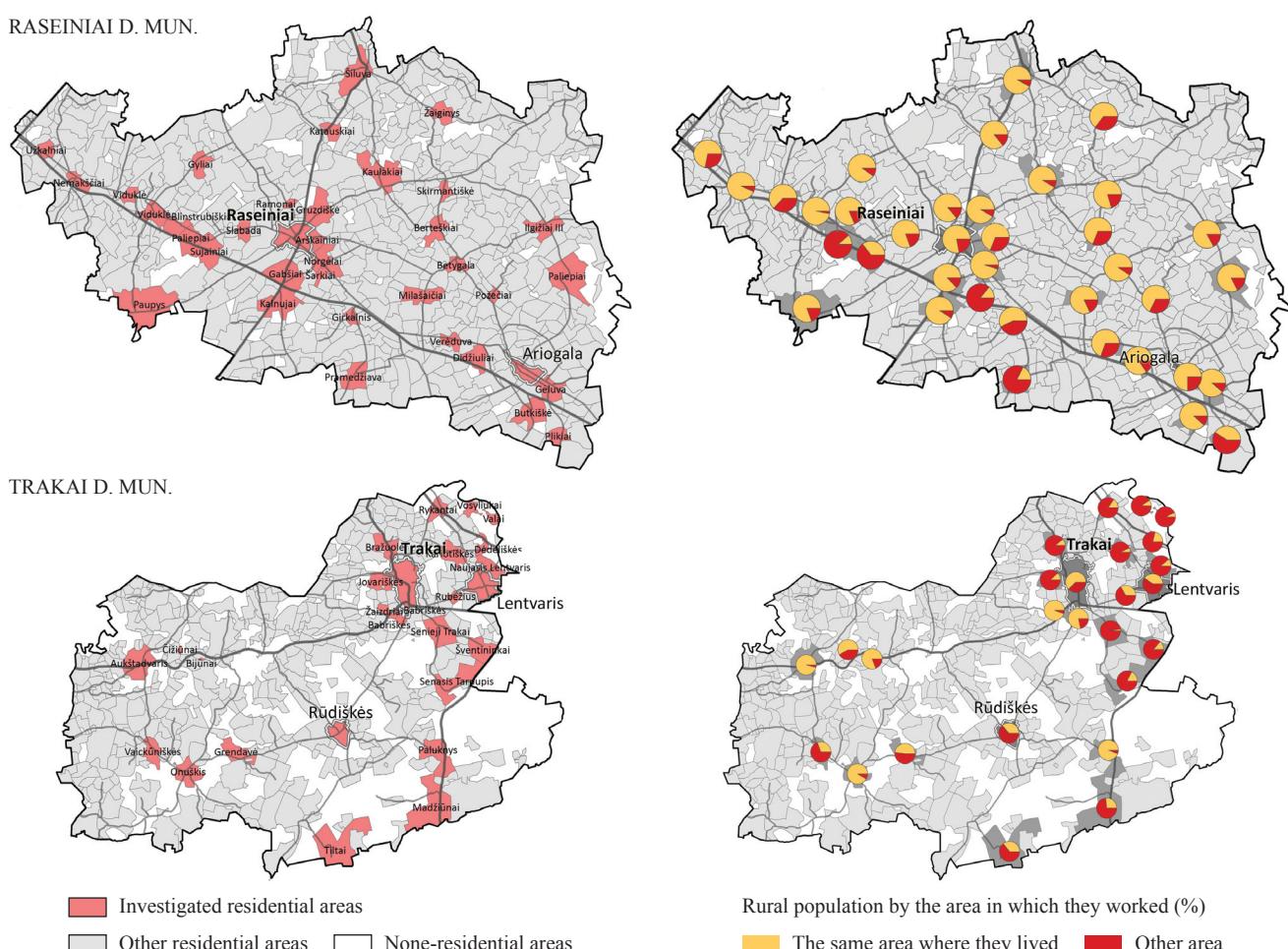


Figure 6: Spatial distribution of the geographical relationship between the place of work and place of residence in two municipalities of Lithuania: Raseiniai and Trakai.

Source: authors' own work based on Census data of Statistics Lithuania

of central and northern Lithuania less than 30 per cent of the employed rural population did so (Figure 5).

With respect to employment we analysed the rural settlements (where the number of employees was more than 50 in 2011) of two municipalities in detail: Trakai municipality being near the capital (Vilnius) and Raseiniai municipality, which is remote from the biggest cities. The analysis allowed us to show that geographical position can have an impact on the employment of the rural population. The closer the settlement was to the city or the main road, the smaller the share of the population that worked in the same settlement (Figure 6). By contrast, if the municipality and the rural settlements were further from the capital and other stronger regional cities, the residents of these distant rural settlements worked in the nearest surroundings.

The survey also illustrated the disparities of rural settlements and their residents even in the same municipality (Figure 6). In Raseiniai district municipality the most mobile residents were in those settlements that were located near the Klaipėda-Vilnius highway. Meanwhile, in Trakai district municipality the most mobile were the residents of the north-eastern part of the district. This part of the municipality is closest to Vilnius city municipality, thus it serves as the place of residence for those that work in Vilnius.

Changes in the functions of rural settlements and centre-periphery factor

While the importance of traditional rural activities decreases in the rural territories the demand for rural territories for other activities increases. The most important of these include the demand in rural territories on the outskirts of larger settlements for the construction of dwellings and the demand for rural territories for the relaxation of citizens in the recreation districts. In the municipalities around the biggest cities (Vilnius, Kaunas and Klaipėda) the suburban settlements (up to 20-30 km from the city centre) are already formed and are developing further. Around the smaller cities (the centres of municipalities), areas of suburban settlements are also forming (only accordingly smaller ones). In the rural territories where there is a demand for recreation, the number of summer visitors is increasing several-fold and the difference between the winter and summer population levels is increasing.

The changes in rural settlements attributable to the factor of centre-periphery take place in the general historically created background of regional differences. North-eastern Lithuania is typified by small villages and western Lithuania by bigger rural settlements. In the different regions of Lithuania, depending on the geographical position with regard to the centre-periphery, the functions of rural settlements have changed in different ways, as described above. However, in most rural territories of Lithuania depopulation of the villages is occurring.

During our survey we investigated the changes in institutions and service establishments in the rural settlements. This analysis showed that institutions in rural settlements are rapidly disappearing.

Firstly, most of the kindergartens in the smaller rural settlements have been closed. In Soviet times it was normal to have a kindergarten in every *kolkhoz* central settlement. After the Soviet Union collapsed, these central settlements lost both their importance and their residents of working age, and the first institutions to be closed were kindergartens. Thus, in six years (from 1989 to 1995) the number of kindergartens in rural territories decreased by over 75 per cent and the number is still falling (Figure 7). Although during the last decade the number of kindergartens has changed only slowly, a fundamental difference is evident between rural and urban territories: in the cities the number of kindergartens has recently increased after a period of stability, whereas in the villages the decline is continuing. Our survey underlined that the number of kindergartens depends on the size of the settlement and its place in the hierarchy of settlements. According to the survey data, the kindergartens remained in the bigger settlements where the number of residents was not less than 600. However, in recent years multifunctional centres have begun to be established in the smaller rural settlements, where the education of groups of pre-school children is projected to be one of the activities.

The speed of decline in the number of schools is also very rapid. Practically all primary schools are being closed, and the closing of basic schools was related to local factors (activity of the community, the role of wards, geographical position etc.). Where schools of neighbouring village com-

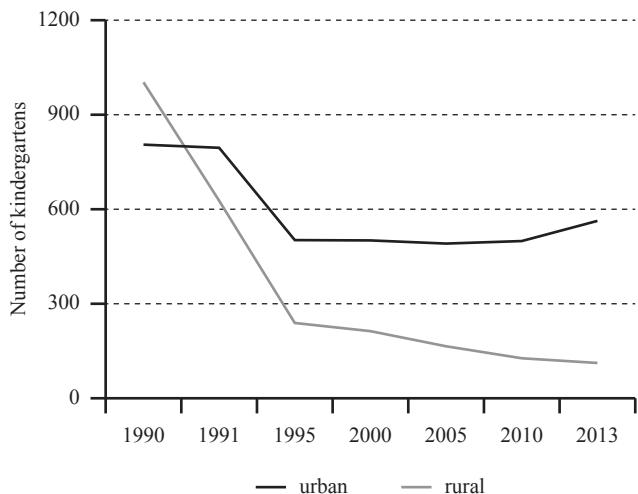


Figure 7: Numbers of kindergartens in urban and rural areas of Lithuania during the period 1990-2013.

Data source: Statistics Lithuania

pete for survival it is often the case that one of the schools is closed and other is renovated. Meanwhile, the libraries remain in almost all settlements where they used to be.

The survey also showed that in practically all rural settlements the former *kolkhoz* catering institutions have disappeared. These catering institutions have remained (or new ones have been established) only in some settlements in the outskirts of bigger cities, near the main roads or in the recreation regions. They do not serve local people but rather the visitors or passing trade. Meanwhile, according to the data collected during our survey, the number of shops in the rural settlements remained similar in comparison with Soviet times. The concentration of shops was noted in the bigger settlements. While visiting the rural settlements we could define different types of shops depending on the size of the rural settlement. Shops belonging to supermarket chains were present in villages with not less than 300 residents. Private shops not belonging to the supermarket chains were found in the smaller villages. Meanwhile, in the smallest villages (<100 population) the residents were usually served by mobile shops visiting the settlements.

Cultural centres, post offices and medical institutions have survived in most former central *kolkhoz* settlements but their hours of operation have been reduced, with some working only for a couple of hours per day. In most settlements the cultural centres were abandoned or badly neglected. In recent years, however, these centres have been renovated at a rapid rate and have become the multifunctional centres for the village residents.

During recent years in Lithuania the activity of local rural communities has increased: in almost every bigger rural settlement projects that are financed by EU funds are being implemented, public squares and central parts of the settlements are renewed, multifunctional centres are being created, and so on. On the other hand, owing to the depopulation and ageing society the possibilities for government, the institutions of the districts or local rural communities to influence the peripheralisation and territorial transformation processes in Lithuania are weak.

Conclusions

The general trend is of negative change in Lithuania, only the three biggest cities (Vilnius, Kaunas and Klaipėda) are able to maintain their demographic and socioeconomic potential. In the greater part of Lithuania the process of peripheralisation is taking place. The constant rural depopulation underlines that many rural territories are in a state of permanent ‘backwardness’ relative to areas that are more attractive for living such as the cities or even foreign countries. The peripheralisation process is clearest in the north-eastern part of Lithuania where there is no city that could serve as a centre of attraction.

One of the main factors influencing the development of rural territories is that of ‘centre-periphery’, which functions in the context of different historically formed settlement networks and natural conditions. The main instrument of this factor is the territorial distribution of work places. The better-paid places of work that exist in the bigger cities and their outskirts determine their greater attractiveness. Data on the share of the employed rural population and the distribution of their work places illustrate the decrease of traditional activities in rural territories and the mobility of rural population. Such a situation can lead to the migration of more mobile residents to places closer to centres of employment (usually the bigger cities or their outskirts).

The concentration of population in the cities and their outskirts and the depopulation of peripheral territories are natural processes that change the territorial residential system that was artificially formed and suited for the *kolkhoz* structure. If these trends continue, the transformation of rural territories could occur in several directions. The rural territories on the outskirts of bigger cities will become the residential quarters for city residents. Those in the recreational regions of Lithuania will be transformed into summer residential settlements. Meanwhile, the rural territories in the periphery will become sparsely populated agricultural and forestry regions. Such scenarios show that some rural settlements are capable of adjusting to the demands of the changing society, whereas the others lag behind and are condemned to slow (or fast) oblivion.

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References

Amcoff, J. and Westholm, E. (2007): Understanding rural change – demography as a key to the future. *Futures* **39**, 363-379. <http://dx.doi.org/10.1016/j.futures.2006.08.009>

Becker, C. and Bloom, D. (1998): The Demographic Crisis in the Former Soviet Union: Introduction. *World Development* **26** (11), 1913-1919. [http://dx.doi.org/10.1016/S0305-750X\(98\)00097-7](http://dx.doi.org/10.1016/S0305-750X(98)00097-7)

Bihari, Zs. and Kovács, K. (2006): Slopes and slides: spatial inequalities in employment opportunities in Hungary at the turn of the millennium. *Europa XXI. Core and peripheral regions in Central and Eastern Europe* **14**, 77-94.

Burneika, D., Ubarevičienė, R., Pociūtė, G. and Kriauciūnas, E. (2013): The impact of Vilnius city on the transformation trends of the sparsely populated EU east border region. *Etniškumo Studijos* **2**, 50-69.

Burneika, D. (2012): Transformations in Lithuania – factors of change and regional patterns, in G. Gorzelak *et al.* (eds), *Adaptability and Change: The Regional Dimensions in Central and Eastern Europe*. Drelow: Poligraf, 267-283.

Churski, P., Burneika, D. and Korec, P. (2014): Areas of economic growth and areas of stagnation as objects of special intervention in the regional policies: an international comparison, in P. Churski (ed.), *The social and economic growth vs. the emergence of economic growth and stagnation areas*. Poznan: Bogucki Wydawnictwo Naukowe, 151-188.

Czyz, T. (2002): Application of the potential model to the analysis of regional differences in Poland. *Geographia Polonica* **75**, 13-24.

Daugirdas, V., Kriauciūnas, E. and Ribokas, G. (2013): Depopulation in EU countries and distribution of sparsely populated territories in Lithuania. *Київський географічний щорічник. Вип. 8*, 31-36.

Dijkstra, L. and Poelman, H. (2008): Remote Rural Regions. How proximity to a city influences the performance of rural regions. *Regional Focus no. 1/2008*, DG Regio. Brussel: European Commission.

Farago, L. (1999): Regional “winners” and “losers”, in Z. Hajdú (ed.), *Regional processes and spatial structures in Hungary in the 1990’s*. Pécs, Hungary: Regionális Kutatások Központja, 316-327.

Grossmann, K., Haase, A., Rink, D. and Steinführer, A. (2008): Urban Shrinkage in East Central Europe? Benefits and Limits of a Cross-National Transfer of Research Approaches, in M. Novak and M. Nowosielski (eds), *Declining Cities / Developing Cities: Polish and German Perspectives*. Poznan: Instytut Zachodni, 77-99.

Jakimavičius, M. and Burinskienė, M. (2007): Automobile transport system analysis and ranking in Lithuanian administrative regions. *Transport XXII* (3), 214-220.

Jonard, F., Lambotte, M., Ramos, F., Terres, J.M. and Bamps, C. (2009): Delimitation of rural areas in Europe using criteria of population density, remoteness and land cover. *JRC Scientific and Technical Report*. Brussel: European Commission.

Kriauciūnas, E. (2010): Some development patterns of Lithuanian rural territories in 1990-2010. *Geopolitical Studies* **16**, 199-212.

Kriauciūnas, E. and Daugirdas, V. (2013): Rečiausiai gyvenamų Lietuvos teritorijų gyvenviečių tinklo ypatumai [The peculiarities of settlement network of the most sparsely populated territories in Lithuania]. *Geografijos metraštis* **46**, 32-45.

Krisjane, Z. (2001): New Trends in the Development of small Towns in Latvia. *Geografiski Raksti* **9**, 33-47.

Lang, T. (2011): Regional development issues in Central and Eastern Europe: shifting research agendas from a focus on peripheries to peripheralisation? in A. Eröss and D. Karacsonyi (eds), *Geography in Visegrad and Neighbour Countries*. Budapest, GRI HAS, 57-64.

Lang, T. (2012): Shrinkage, Metropolization and Peripheralization in East Germany. *European Planning Studies* **20** (10), 1747-1754. <http://dx.doi.org/10.1080/09654313.2012.713336>

Nacionalinė žemės tarnyba (2013): Lietuvos Respublikos žemės fondas 2013 m. sausio 1 d. [The land fund of the Republic of Lithuania, 1 January 2013]. Vilnius: National Land Service under the Ministry of Agriculture and the State Enterprise Centre of Registers.

Nagy, E. (2005): Urban Development in Post-transition Hungary:

Emerging Social Conflicts as Constraints for a Locality. *Geographia Polonica* **78** (1), 137-151.

Nagy, G. (2006): Economic potential of regions – modelling the spatial structure of Hungary in the period of transition. *Europa XXI. Core and peripheral regions in Central and Eastern Europe* **14**, 7-26.

Otto, M. and Chmielewska, M. (2014): Social inclusion by revitalisation? The potential of disused industrial areas as an opportunity for mitigating social polarisation. *Quaestiones geographicae* **33** (2), 115-125.

Pallagst, K. (2010): Viewpoint: The Planning Research Agenda: Shrinking Cities, a Challenge for Planning Cultures. *Town Planning Review* **81** (5), 1-6. <http://dx.doi.org/10.3828/tpr.2010.22>

Raagmaa, G. (1996): Shifts in regional development of Estonia during the transition. *European Planning Studies* **4** (6), 683-703. <http://dx.doi.org/10.1080/09654319608720374>

Raagmaa, G. (2003): Centre-periphery model explaining the regional development of informational and transitional society. Paper presented at the 43rd Congress of the European Regional Science Association, Jyväskylä, Finland, 27-30 August 2003.

Reckien, D. and Martinez-Fernandez, C. (2011): Why Do Cities Shrink? *European Planning Studies* **19** (8), 1375-1397. <http://dx.doi.org/10.1080/09654313.2011.593333>

Republic of Lithuania (1994): Republic of Lithuania Law on the Territorial Administrative Units of the Republic of Lithuania and Their Boundaries (1994). *Valstybės žinios* **60-1183**.

Schurmann, C. and Spiekermann, K. (2006): Accessibility Analysis of the Baltic Sea Region. Final Report for the Baltic Sea Region INTERREG IIIB Secretariat. Dortmund: Spiekermann & Wegner Urban and Regional Research, and Oldenburg in Holstein: Spatial Planning and Geoinformation (RRG).

Scott, A. and Storper, M. (2003): Regions, Globalization, Development. *Regional Studies* **37** (6-7), 579-593. <http://dx.doi.org/10.1080/0034340032000108697a>

Smith, N.R. (1996): The New Urban Frontier: Gentrification and the Revanchist City. New York: Routledge.

Sobotka, T., Zeman, K. and Kantorova, V. (2003): Demographic Shifts in the Czech Republic after 1989: A Second Demographic Transition View. *European Journal of Population* **19** (3), 249-260. <http://dx.doi.org/10.1023/A:1024913321935>

Timár, J. and Kovács, Z. (2009): Hinterland Development, in R. Kitchin and N. Thrift (eds), *International Encyclopaedia of Human Geography* (Volume 5). Oxford: Elsevier, 128-135. <http://dx.doi.org/10.1016/B978-008044910-4.00843-9>

Tóth, G. (2006): Centre-Periphery Analysis about the Hungarian Public Road System. Paper presented at the 46th Congress of the European Regional Science Association, Volos, Greece, 30 August – 3 September 2006.