6 Socio-ethnic segregation in the metropolitan areas of Lithuania

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Abstract

One of the specific features of many post-Soviet cities is their multi-ethnic structure, which was strongly influenced by internal migrations within the Soviet Union. Political and economic reforms in the 1990s led to changes in ethnic composition, and the attention given to the processes of ethnic-segregation has started to increase. While most studies focus on capital cities, much less is known about second-tier cities. This article examines the interrelationships between ethnic and social segregation in the metropolitan areas of Lithuania (Vilnius, Kaunas, Klaipėda). The authors use Lithuanian census data from the years 2001 and 2011 to obtain insight into the recent changes in the socio-spatial differentiation of the largest ethnic groups: Lithuanians, Poles, and Russians. The results show a clear relationship between the socio-economic and ethnic status of the residents of metropolitan areas and, therefore, suggest that ethnic segregation is strongly linked to the general processes of social segregation. The findings also show that the higher the proportion of a certain ethnic minority group in an area, the higher the proportion of lower (social) status residents in this group. In addition, in such cases, ethnic minorities often tend to concentrate in particular areas within the cities.

Keywords

Socio-ethnic segregation; metropolitan areas; Lithuania

Introduction

The transition from the Soviet regime to a market-led neo-liberal economy resulted in the demise of public housing policies and rapid sprawl in metropolitan areas (MAs), mostly through the processes of weakly planned and unregulated residential suburbanisation (Borén & Gentile, 2007; Gentile, Tammaru, & van Kempen, 2012; Hamilton, Andrews, & Pichler-Milanovic, 2005; Sailer-Fliege, 1999; Sýkora & Ouředníček, 2007). Nowadays, much attention in the literature is paid to capital cities and their MAs, where the centralisation of the economy and population has resulted in the most intense and most visible urban sprawl (Smętkowski et al., 2011; Ubarevičienė, Burneika, & Kriaučiūnas, 2011). Social and ethnic segregation research has also focused on capital cities (Tammaru, Marcińczak, van Ham, & Musterd, 2016). Much less attention has been given to second-tier cities and their MAs, though similar processes should be found there too, while the problems connected with these areas could be even more serious. Links between urban sprawl and segregation are rather straightforward since suburbanisation is strongly associated with population redistribution and it is also related to income differences between different social groups.

This article seeks to obtain more insight into the interrelationships between social and ethnic residential differentiation in three major MAs of Lithuania formed by the cities of Vilnius, Kaunas, and Klaipėda. These three cities, with their distinctive historic development, geographical location, urban structure, economy, demographic, and, most importantly, ethnic structure, as well as their different trends in current growth, have started to play a new role in the fast-changing Lithuanian settlement system. In the rapidly-shrinking country, they are the only macro-regional centres that still have the potential to grow, even though a decline in the population is evident in the cities' central parts, which mostly consist of densely built-up high-rise Soviet buildings. In Lithuania, the process of population redistribution should be most visible in these three MAs because, apart from the nationwide trend of population decline, these territories are also experiencing an inflow of new residents. It can be expected that the significant spatial transformation of the MAs has been accompanied by major changes in their social structure, such as an increase in social and ethnic segregation. Recent research (Burneika, Ubarevičienė, & Valatka, 2016; Valatka, Burneika, & Ubarevičienė, 2016) has already revealed an increase in socio-economic segregation in Lithuania. However, little is known about the trends of ethnic segregation in the MAs. The analysis of three different MAs could help us to understand to what extent ethnicity can be associated with socio-economic status in Lithuania.

The ethnic differences between the populations of Lithuanian MAs make their comparison of special interest. They also help to reveal the relationships between the size of ethnic minority groups and their socio-spatial positions in different MAs. This article aims to explore the ethnic composition of the MAs and determine the links between ethnic composition and the general processes of socio-spatial residential differentiation. We seek to learn whether different ethnic groups can be associated with different socio-economic statuses and whether these groups tend to occupy different urban spaces. We expect to find that the MAs of Lithuania have different ethnic landscapes and trends of segregation. Our hypothesis is that the share of ethnic minorities in a city or area and the size of their communities have a substantial influence on the socio-economic positions of ethnic minorities in society. We also assume that the inherited (from the Soviet period) ethnic landscape started changing after free market forces (which are weakly controlled by neoliberal economic policies) had begun to play their role. However, the question remains whether spatial residential differentiation has started to disappear or, on the contrary, is increasing. We expect that the recent changes can be related to the positions that particular groups of ethnic minorities have in particular cities and to the urban spaces they traditionally occupy. Bearing in mind the different conditions behind the formation of ethnic groups in the MAs, we expect that the socio-economic differences among the ethnic groups will be noticeable and will differ between MAs. This is also one of the motives for including three MAs in the analysis. However, the Vilnius MA receives more attention because of the unique spatial pattern of ethnic composition there and the greater intensity of the segregation processes.

In this article, we use the concept of segregation to highlight the spatial differentiation of certain groups, but we do not try to characterise the type of processes observed. There are no reliable data that would help to identify the exact reasons for spatial differentiation (and differences between ethnic groups in particular) in Lithuania. The negative and positive aspects of segregation will not be discussed here either. However, we can state that both can be found and the negative aspects are dominant (see van Kempen & Özüekren, 1998).

We use individual-level and census-tract level sets of Lithuanian census data from 2001 and 2011. Cartographical and statistical methods (descriptive and correlation analysis, logistic regression) are used in the analysis. Occupational status is used as a proxy for socio-economic status.

Social and ethnic segregation - the theoretical perspective and previous studies

Processes of social and ethnic segregation are as old as cities themselves. Greater scientific attention to this phenomenon is associated with the famous Chicago school of sociology dating back to the beginning of the previous century (van Kempen & Özüekren, 1998). The studies from that time were already outlining the importance ethnic (racial) dimensions held for the processes of social segregation.

Segregation (or spatial segregation) can be defined as the residential separation of groups (ethnic, social, etc.) within the broader population. According to the *Dictionary of Human Geography*, 'the phenomenon of segregation is said to occur when two or more groups occupy different spaces within the same city, region or even state' (Hiebert, 2009, p. 673). In this sense, segregation basically corresponds to the concept of socio-spatial residential differentiation. The concept of segregation is sometimes used to stress the 'forcible' nature of the process, as low-status groups are pushed out of the best locations and start to concentrate in less attractive places or in places that at least to some extent they would prefer not to live in (Briggs & William, 2005; Žilys, 2013) . The term 'concentration' (or spatial concentration), also used in this paper, indicates the overrepresentation of certain groups in certain areas. Particular groups can be distinguished according to their income, ethnicity, race, occupation, etc. (Massey & Denton, 1988). In this article, we use the concept of 'socio-ethnic segregation' to determine residential differentiation, which is based on two parameters of a group, namely its social status and ethnicity. Empirical research has only recently begun to analyse the relationships between different forms of segregation (Clark & Blue, 2004). This article is the first study that explores these interrelationships in Lithuania. Here we assume that socio-ethnic segregation exists if groups of distinctive social status and ethnic origin live separately from one another. In this case, different ethnic groups have a different social status and live in different spaces.

Studies of residential differentiation and ethnic segregation have been carried out in many Western countries since the beginning of the last century. Research based on quantitative data analysis revealed that there were three principal dimensions of a residential structure: class, race, and household structure, and they were typical of many cities (Hamnett, 1996). In Western cities (first of all, North America), the housing segmentation of ethnic minorities, who usually live in less desirable housing, generally has two traditional causes which could be identified as micro- and macro-level factors (structure and agency alternative). First, ethnic minorities often have fewer resources, which limits their ability to acquire housing. Second, discrimination in the housing market might restrict their choices (Bolt & van Kempen, 2010; Semyonov &

Glikman, 2009). For example, in the United States, there has been a long history of African Americans living in poor housing conditions (Massey & Denton, 1993; Wilson, 2012). Although the processes of spatial differentiation of ethnic minorities in Western European cities have been studied for several decades, their findings provide little help in understanding ethnic landscapes and their formation processes in post-Soviet cities. At present, ethnic diversity in Western Europe in many cases may be regarded as a result of post-colonial processes, while ethnic diversity in the Baltics can mostly be deemed the result of colonialism. Ethnic minorities (or, in fact, majorities, if we count the whole Soviet Union) that migrated to Baltic cities were not in disadvantaged socio-economic positions. This is likely to have changed after post-communist reforms were introduced, which included property restitution and the strengthening of the position of national languages in public and institutional life. Studies of residential segregation in the former Soviet Union have also revealed significant ethnic differences in housing and residential patterns (Gentile & Tammaru, 2006; Kulu & Tammaru, 2003; Milstead, 2008; Ruoppila, 2004). In the former Soviet Union, rapid industrial growth was followed by the immigration of Russian-speakers (mainly from Russia) to other republics, which prompted a desperate need for new housing that was instantly met in the form of high-rise multi-family complexes (Rybakovskiy & Tarasova, 1991).

Studies of countries that share a similar historical pathway as Lithuania in the 20th century have shown the residential differentiation of ethnic minorities to be distinctive in character (Krišjāne, Bērziņš, & Kratovitš, 2016; Tammaru, Kährik, Mägi, Novák, & Leetmaa, 2016) and quite different from what has been observed in Western cities. However, this is to be expected when one considers the historical circumstances that led to the formation of highly multi-ethnic urban landscapes. In many post-Soviet cities, ethnic residential differentiation was shaped during the Soviet period, and since then the changes have been too modest to overcome the inherited patterns of housing segmentation (Hess, Tammaru, & Leetmaa, 2012). Once established, the residential differentiation of ethnic minorities is long-lasting, even when ethnic minority groups experience changes in their social status and when significant societal transformations occur. Ethnic housing integration was also limited in the course of post-Soviet transition. A study of the second-largest Estonian city, Tartu (Hess et al., 2012), showed that Russian-speaking immigrants are overrepresented in modern Soviet housing estates equipped with better facilities, while Estonians are overrepresented in single-family housing. A study carried out by Gentile and Tammaru (2006) in Ust'-Kamenogorsk, Kazakhstan, interestingly showed that the housing conditions of native Kazakhs were considerably worse than those of Russians and other ethnic groups in 2001.

The latest research on the Baltic capital cities has shown that the situation is quite different among the three countries. Tallinn appears to be one of the most segregated European cities in terms of both ethnic and socio-economic segregation (Tammaru,

Kährik, et al., 2016). Riga, by contrast, is ethnically one of the least segregated cities (Krišjāne et al., 2016). Though there are many studies on ethnic minorities in Lithuania, and especially on the country's multi-ethnic south-eastern region (Frėjutė-Rakaskaunié, 2015; Gaučas, 1997; Korzeniewska, 2013; Pileckas, 2003), little is known about ethnic segregation. On the other hand, studies suggest that in Vilnius socio-economic segregation might be linked to ethnic segregation (Milstead, 2008; Valatka et al., 2016). Moreover, it has been revealed that the sprawl of the Vilnius MA has had an effect on both the socio-demographic and the ethnic structure of the area (Burneika, Ubarevičienė, & Pociūtė, 2013; Ubarevičienė, Burneika, & van Ham, 2015). Therefore, the empirical part of this paper will shed more light on the interrelationships between ethnic and socio-economic segregation in the major MAs of Lithuania.

§ 6.3   Data and methods

This article analyses the patterns of socio-ethnic segregation in three major MAs in Lithuania, namely Vilnius (635 480), Kaunas (392 313), and Klaipėda (210 635). MAs consist of urban cores and suburbs but also cover less urbanised rural areas where suburban settlements are mixed with rural ones (Smętkowski et al., 2011). Their limits, which illustrate the dispersion of suburbanisation processes, were determined at the level of LAU 2 regions and three indicators were taken into account: a change in the population between 2001 and 2011, the number of new single-family houses (built after 2006), and in-migration (the number and origin of newcomers in 2010–2011[29]). We use the term 'city' to refer to the city municipality in its administrative borders.

Our study uses Lithuanian census data from 2001 and 2011. We use census tract level data to illustrate the ethnic composition of the metropolitan areas and *seniūnija* level (LAU 2 statistical regions) data to monitor changes in the ethnic structure of the MAs.[30] Individual-level data are used to explore the relationships between the socio-economic and ethnic characteristics of individuals.

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29   The census only captures population moves in the last 12 months prior to the census.

30   Although we would prefer to use census-tract level data to track changes in ethnic composition, georeferenced data on the census-tract level were not available for the 2001 census.

A spatial scale is an important dimension for analysing segregation processes because segregation on a lower scale does not necessarily mean segregation on a higher one or vice versa. For example, on the local administrative level of *seniūnija* (~20 000–30 000 residents), ethnic segregation in Vilnius is minimal since Lithuanians make up the majority of the residents in all these regions. However, if we look at the census tracts level (~600 residents), we find that in some areas Lithuanians make up less than 15% and in other areas more than 90% of the total population. The modifiable areal unit problem (MAUP) is well known in geography. It mostly rises from the imposition of artificial units of spatial reporting on continuous social (geographical) phenomena (Heywood, Cornelius, & Carver, 1998; Openshaw, 1984). Therefore, any illustrated patterns distort reality and those distortions depend on the accuracy of the delimitation of the units in use. On the other hand, it can be assumed that the more detailed the spatial scale is, the more accurate the picture of reality that is obtained.

We use self-reported data on ethnicity to analyse residential differentiation of Lithuanian, Polish, and Russian ethnic groups. These are the main ethnic groups in the studied MAs and in Lithuania overall. Although some other ethnic groups of Soviet Union origin are also quite numerous in Vilnius, they make up several times smaller communities in the other cities and regions. Data on the mother tongue could be interesting as well, because many immigrants from the former Soviet Union use Russian as their communication language. However, this alternative would raise certain problems due to the fact that many Poles also use Russian as their mother tongue.

Statistical methods (descriptive and correlation analysis, logistic regression) were used in the analysis, which are based on the ethnic and occupational structure of residents. We used aggregate data at the level of census tracts not only to map the ethnic landscape, but also to explore the relationships (correlations) between the share of a particular ethnic group and various socio-economic characteristics in different MAs. A series of logistic regression models (on the individual level) were run to indicate whether there are significant differences between individuals belonging to different ethnic groups and their socio-economic characteristics. The socio-economic characteristics included the following variables: university education, high-ranking occupation (managers and professionals), unskilled workers,[31] and the unemployed.

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31   We use the International Standard Classification of Occupations (ISCO) provided by the International Labour Organization (2012).

The ethnic composition of the major metropolitan areas in Lithuania

The frequent shifts in political borders in the 20th century have had a profound impact on the current ethnic structure of Lithuania. In this respect, the MAs of Lithuania are rather different from one another and that makes their comparison interesting - including in an international context. The Kaunas MA can be described as mono-ethnic, with a small Russian community. In Vilnius, Polish-identity residents constitute the largest minority group (followed by Russians) and Polish residents dominate the region surrounding the city. Klaipėda has the highest share of the Russian minority compared to the other Lithuanian MAs and therefore more resembles Tallinn and Riga.

Vilnius has always been the most multi-ethnic city of Lithuania (Stanaitis & Česnavičius, 2010). The population of Vilnius City decreased by more than twice just after the Second World War. Two events were responsible for this significant change. First, the Holocaust reduced the Jewish population from 57 000 to 2000 (Jews had made up 30–50% of the total population at various points in time since the 15th century) (Mendelsohn, 1983; Vaitiekūnas, 2006). Second, the war marked the end of Polish governance[32] and the beginning of the Soviet period. This shift in power was accompanied by Polish repatriation—107 000 Poles (the majority of the city population before the Second World War) left the city between 1945 and 1947 (Czerniakiewicz & Czerniakiewicz, 2007; Daukšas, 2008). Repatriation from the surrounding region was much smaller in scale (Eberhardt, 2011). As a consequence, the later expansion of the city's administrative limits took place in areas dominated by the Polish population. After the Soviet regime established itself, mass industrialisation accelerated the growth of Vilnius City and led to a rapid increase in its population. Vilnius City began to fill up with immigrants, most of whom were from other parts of Lithuania, but also from more remote areas of the Soviet Union. On the other hand, the inflow of Russian-speaking people to Vilnius (and other industrial centres of Lithuania) was not as intensive throughout the Soviet period as it was in other Baltic capitals; consequently, the share of Russians in Lithuania remained much smaller. A unique ethnic landscape eventually took shape in the Vilnius MA, with the core city dominated by newcomers from Lithuania and from all over the USSR, and the surrounding region dominated by Poles (mostly of rural origin). Another period of change occurred after the

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32   Between 1920 and 1939, Vilnius region was under Polish governance. The Polish population in this region grew during this period.

restoration of Lithuanian independence in 1990. Like in the case of many other post-Soviet cities, Vilnius, too, saw the departure of a number of Russian-speaking residents (Tammaru & Kulu, 2003). The beginning of suburban development, which was constrained under the communist regime, led to processes of urban sprawl, which has also started to affect the ethnic composition of the Vilnius MA. The maps in Figure 6.1 (top row) show in close detail (on the census-tract level) the ethnic landscapes of different ethnic groups in Vilnius City and its surrounding areas. The concentration of different ethnic groups is highly uneven. It is clear that Russians are overrepresented in the more industrialised urban core zones and in Soviet housing estate neighbourhoods, while Poles dominate in the former rural areas further from the metropolitan centre. At present, Lithuanians make up approximately 60% of all residents in the MA and 63.3% in Vilnius City; however, there are many census tracts (mostly in new suburbs) where the share of Lithuanians exceeds 90%. The share of Poles, who comprise 20.8% of the total population of the MA, exceeds 80% in the most peripheral parts of the MA (Statistics Lithuania, 2015). A combination of urban sprawl with these contrasts in the ethnic landscape can be expected to affect (increase or decrease) the processes of social segregation.

The population of Klaipėda was also completely reshaped during the Second World War. There were only 3600 residents in 1945 compared to 47 200 in 1938. The city had re-attained its pre-war size by 1950, but its social and, of course, ethnic structure had changed. What had been a German-Lithuanian city (57.8% and 30.3%, respectively, in 1926) became a Lithuanian-Russian one (73.9% and 19.6%, respectively, in 2011 (Statistics Lithuania, 2015)). During the Soviet period, the development of industry and sea-port activities in Klaipėda resulted in mass in-migration both from the rest of Lithuania and all over the USSR. As a result of in-migration related to Soviet industrialisation, Russians are overrepresented in Soviet housing estates in the southern and central parts of the city municipality (Figure 6.1, bottom row, right). Like the other cities, there was little in-migration of non-Lithuanians into the area surrounding Klaipėda, so the city and its suburbs remained almost purely Lithuanian in terms of the ethnic composition. Since Russians are the dominant minority group in the Klaipėda MA, the distribution of Lithuanians has a pattern opposite to that of the Russians and, therefore, there is no separate map shown (this is also the case of the Kaunas MA).

Although the population of Kaunas did not experience the extent of decimation during the Second World War and in the post-war period as the other two cities did, significant changes still occurred. The city lost around half of its pre-war population and grew quickly afterwards (pop. 155 000 in 1939, 80 000 in 1945, and 217 000 in 1959). Kaunas did not experience such drastic changes in its ethnic structure, and Lithuanians remained the dominant ethnicity there before and after the war. The proportion of

Lithuanians was constantly increasing and had reached 90% by the end of the Soviet period, and it continued to grow after that (93.7% in 2011). Russians are the biggest ethnic minority in Kaunas (3.8% in 2011), while other ethnic groups altogether make up 2.5% of the population. Lithuanians dominate throughout the MA and Russians represent a larger share of residents only in some specific areas. For example, in housing estates near industrial zones (which often used to have a military function) or in Russian Orthodox settlements from the 19th century, which are located on the periphery of the MA (similar villages can also be found in the Vilnius MA). In fact, Kaunas is the most mono-ethnic metropolitan city in the Baltics. Figure 6.1 presents a map (bottom row, left) showing the distribution of Russians in the Kaunas MA.

Migration was the main force that altered the ethnic structure of the MAs. Therefore, factors influencing migration flows and their directions should be considered those most important. One distinctive feature of Lithuania that has a strong influence on current migration flows is its uniform settlement system. The Soviet urban planning and development policy in Lithuania sought to curtail the growth of the country's biggest cities and especially Vilnius. Therefore, there is no one clearly dominant metropolitan area in Lithuania. No other European state of a similar size has such a uniform urban system. It is very likely that this is the main cause of the high migration rates (internal and outward) that led to the rapid change in the urban network in the post-Soviet period. It could also mean that there are more complex internal migration flows, where Kaunas and Klaipėda serve as alternative macro-regional centres, while high rates of out-migration from the peripheral regions of the country could be explained by their weak social ties to the capital city of Vilnius (where the best-paid jobs and education institutions are).

The three MAs are the major destination points in Lithuania, thus migration to these MAs is associated with changing ethnic structure. In addition, the actual absence of suburbs in Soviet cities resulted in fast suburban development later on. The suburban areas around the three major cities were the only areas in the country to gain population since the 1990s. Suburbanisation had to have some impact on the ethnic and social structure in both the cities and their surrounding areas for the same reason – namely, the ethnic differences between the city cores and their suburbs. Nowadays, suburbanisation is the main process changing the social and ethnic landscapes in the MAs. The actual consequences of this process will be revealed in the next chapter.
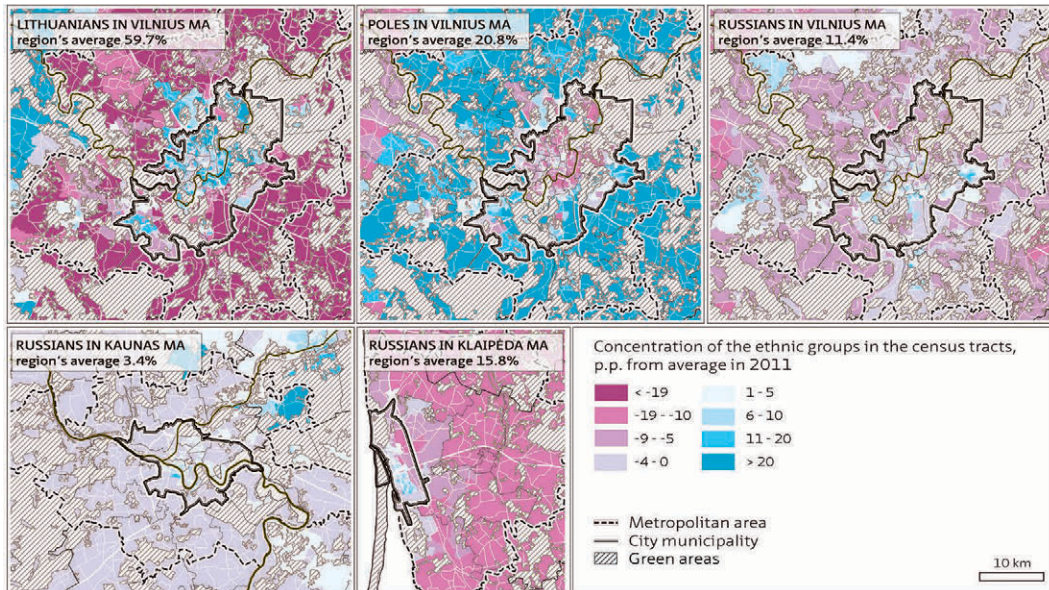
FIGURE 6.1 Ethnic landscapes of the metropolitan areas on the census-tract-level in 2011 (percentage points from regions' average)
Source: Authors' maps; Statistics Lithuania (2011)

Recent changes in the ethnic structure

Since the beginning of the new millennium, the processes of migration- and suburbanisation-driven urban sprawl have been the two major components of spatial development, and they have had a considerable impact on the transformation of the ethnic landscape in Lithuania. It can be expected that due to suburbanisation the ethnic structure of suburban zones should eventually converge with the ethnic structure of inner cities, from where the major flows of migrations towards the suburbs originate. However, it is known that migration is selective, and it is related to age, ethnicity, level of education, socio-economic status, etc. (Fratesi & Percoco, 2014; Tervo, 2000). Lithuanian census data from 2011 show that ethnic minorities are less likely to be involved in migration processes and that they are less likely to suburbanise than Lithuanians. This suggests that migrations within Lithuania should eventually lead to a decline in ethnic differentiation, especially in the Vilnius and Klaipėda MAs. On the other hand, emigration abroad from multi-ethnic regions might play a role in keeping the share of non-Lithuanians at a higher level. The most important question in this case is whether the migratory behaviour of different ethnic groups is similar in different MAs.

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Significant differences in the initial ethnic structure of the three MAs determine the different trends in the recent change of ethnic composition. We can expect that the greater the differences between the city and the hinterland from which the city is gaining population, the more visible the changes in their ethnic composition are. Lithuanians make up more than 90% of the population in the hinterlands of all three MAs. This is also typical of Vilnius, which is the major destination point from all over the country. The analysis of the individual-level data showed that the flows of migration from Polish-dominated areas, which are located on the outskirts of Vilnius City, are lower than from more remote areas, where Lithuanians dominate. The greater the ethnic differences between the urban core and a suburban zone, the more visible the changes should be. In this case, the ethnic structure of the Vilnius MA, which is the most contrasting area of the country, should experience the most profound changes in its ethnic (and social) structure both in the city core and its suburbs. At the same time, regions with a more uniform ethnic structure should not experience significant transformations. The results of our analysis confirm this statement (Table 6.1, Figure 6.2). Due to the limitations of the 2001 census data, the analysis is carried out at LAU 2 level instead of the census tracts.

2011 (CHANGE FROM 2001 P.P.)	LITHUANIA	VILNIUS MA	KAUNAS MA	KLAIPĖDA MA
Lithuanians	84.2 (+0.7)	59.7 (+5.8)	94.1 (+0.5)	78.7 (+2.8)
Poles	6.6 (-0.1)	20.8 (-2.8)	0.3 (-0.1)	0.3 (0.0)
Russians	5.8 (-0.5)	11.4 (-1.9)	3.4 (-0.7)	15.8 (-1.9)
Others	3.4 (-0.1)	8.1 (-1.1)	2.1 (+0.1)	5.2 (-0.8)

TABLE 6.1 Ethnic composition in 2011 and the change in ethnic composition in 2001–2011 in the metropolitan areas
Source: Statistics Lithuania (2011)

The share of Lithuanians was increasing throughout the country during the last decade (by 0.7p.p.) (Statistics Lithuania, 2015), but the pace of change was greatest in Vilnius MA. The share of Lithuanians significantly increased in regions dominated by Poles (Figure 6.2 top row, left; compare with Figure 6.1). Our results show that Lithuanians have started to dominate in some parts of the suburban areas of Vilnius and, moreover, the share of Lithuanians has started to exceed the city average in some places there. This confirms that Lithuanians dominate among suburbanites, and the reasons for this may be higher incomes of the ethnic majority (Lithuanians) and/or the different locational priorities due to cultural differences. For example, according to the census data, in 2010, 74.6% of the residents that moved from the Vilnius city municipality to the most typical suburban area, namely Riešė *seniūnija*, were Lithuanians. The share of Russians dropped in the central part of Vilnius City (Figure 6.2, top row, right). It is likely that this trend illustrates the gentrification of the city centre, as less prosperous

ethnic minorities are being pushed out of well-situated areas. The ethnic structure is stable in the biggest Soviet housing estate neighbourhoods in Vilnius, which indicates ethnic equilibrium and/or absence of migrations there.

One could expect that changes in ethnic composition (especially in the context of a fragmented political field) would have certain negative social consequences, namely conflicts between ethnically and socially different communities. However, our earlier studies in the field showed that there are no serious social conflicts in the urban sprawl zone, where the ethnic identity of 'newcomers' and 'locals' usually differs. Interviews with local experts (representatives of local administrations and communities) were carried out in 2010–2011 in the Vilnius MA in order to establish the specific features of Vilnius's urban sprawl (Burneika & Ubarevičienė, 2011). Similar results were obtained from interviews carried out in 2014–2015 in the suburban zones of the major cities. Some tensions between local authorities and newcomers can be identified, but the reasons for them lie in the wealthier suburbanites' higher expectations with respect to communal (public) services and the limited resources of the local authorities to meet them. The planning and regulation of city sprawl was reported as insufficient by representatives of local administrative bodies.

The ethnic landscape of the Kaunas MA is the one that is the most stable (Figure 6.2, bottom row, left; the share of Russians is mapped). Both the city and its surrounding area are gaining population from areas where the Lithuanian population is dominant. However, certain areas with a larger share of Russian minorities (Soviet industrial-military zones and Russian Orthodox settlements from the 19th century in the north-east of the region) showed rapid changes in the ethnic structure over the past decade. As in the case of Vilnius, the decreasing share of Russians can be mostly attributed to suburbanisation, though some changes in ethnic identity may also have occurred. In fact, the decline in the share of Russians is mostly caused not by a decrease in the number of Russians (or Poles in the case of the Vilnius suburbs), but by an increase in the number of Lithuanians in the suburban areas.

An increasing share of Lithuanians and a decreasing share of Russians are the main features of the Klaipėda MA (Table 6.1), which receives population predominantly from mono-ethnic western Lithuania. A decreasing share of Russians has been recorded in Klaipėda City, while, interestingly, the previously purely Lithuanian suburban zone of Klaipėda is becoming more mixed as the Russian minority is growing in size and share there (Figure 6.2, bottom row, right; the share of Russians is mapped). Although Russians accounted for only 9.1% of the total suburbanites in the Klaipėda MA (19.6% of the city's population were Russians in 2011), this had a fairly significant impact on the ethnic landscape in the suburban zone. Klaipėda's case demonstrates that there are differences between ethnic groups (Russians in this case) in terms of their

participation in the suburbanisation process and in migration behaviour in general. It may also imply that the social position of ethnic minorities varies in the different MAs in Lithuania.
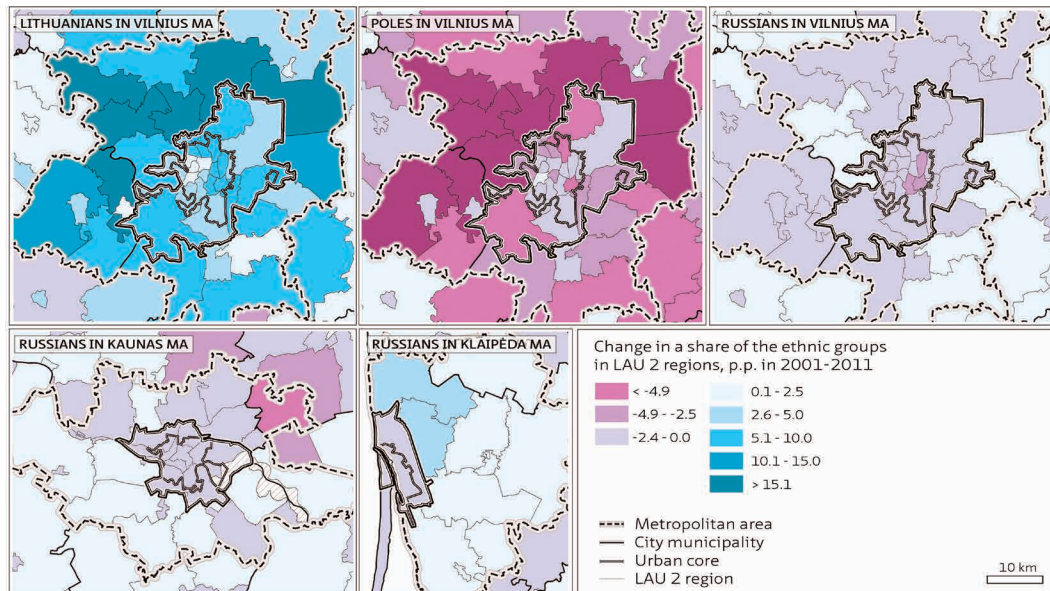

FIGURE 6.2 The change in ethnic composition in metropolitan areas on the LAU-2 level between 2001 and 2011 (percentage points)
Source: Authors' maps; Statistics Lithuania (2011)

Socio-ethnic segregation in the metropolitan areas

Before going into an analysis of socio-ethnic segregation, we should briefly introduce more general trends of socio-economic segregation in Lithuania. First, it has to be mentioned that in Lithuania the GINI index evaluating income inequality was among the highest in the European Union during the past decade (Eurostat, 2015), which leads us to expect higher levels of segregation in the country. On the other hand, a comparative study of European capital cities revealed that in 2011 the urban space of Vilnius was one of the most uniform in terms of socio-economic segregation (Tammaru, Marcińczak, et al., 2016). A deeper analysis of socio-economic segregation in Lithuania was carried out only for Vilnius city municipality (Marcińczak et al., 2015; Valatka et al., 2016). Our recent preliminary calculations show that compared to Vilnius City segregation is considerably lower and the measured indices (index of

segregation, dissimilarity and isolation) are smaller in Kaunas and Klaipėda cities. In 2011, the index of segregation of the high socio-economic status[33] group was 32 in the suburban zone of Vilnius, while it was below 30 in Kaunas and Klaipėda. The index of dissimilarity between managers and unskilled workers exceeded 40 in Vilnius, while it stood 10 points lower in other cities. The index of isolation, showing the degree of spatial separation (or actual spatial segregation), was typically the highest in the high status group (managers and professionals) in all the three cities, and this separation increased between 2001 and 2011. The general trend is that the bigger the city, the higher the index of isolation of the high status group in that city (Figure 6.3).
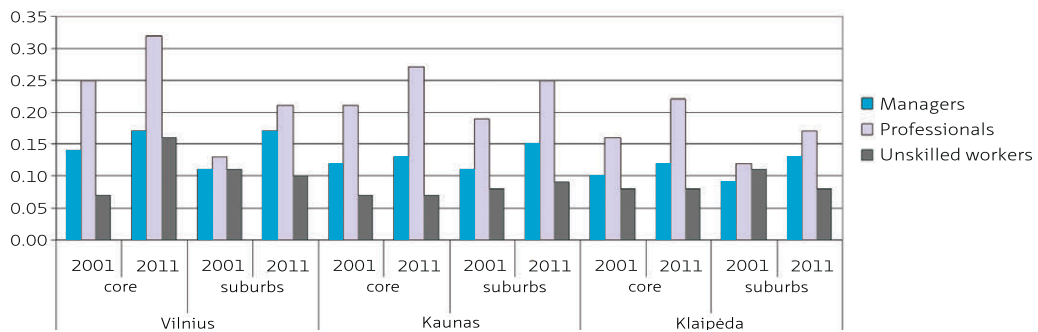

FIGURE 6.3 Index of isolation of occupational groups in metropolitan areas in 2001 and 2011 on the census-tract level
Source: Authors' figure; Statistics Lithuania (2001, 2011)

Income level is considered to be the best indicator of the spatial segregation or stratification of modern society. However, data on incomes are not always available; occupational groups (ISCO categories) are therefore often used as an alternative in research. Although the relationship between income level and occupational status is imperfect, general conclusions can be drawn. A national labour force survey showed that the gross earnings of managers were 3.4 times higher than those of unskilled workers in Lithuania in 2010 (Statistics Lithuania, 2015).

Even though the level of spatial segregation of occupational groups was quite low in Vilnius in 2011, recent studies have revealed that socio-spatial residential differentiation is increasing (Valatka et al., 2016). The highest social status groups are

33   Occupational status, according to the ISCO categories, is used as a proxy for socio-economic status, with managers and professionals representing groups with high socio-economic status, and unskilled and low-skilled workers those with low socio-economic status.

starting to live in increasingly greater separation from groups with the lowest social status, especially in suburbs and central locations. There is a clear major division between the relatively rich north and the poor (industrial) south of Vilnius City (the location quotients of the low occupational group are shown in Figure 6.4) and this division shows an increasing tendency. Poorer groups are being pushed out of the more prestigious locations in the city centre and from a suburban zone located in the north of the city.

The increasing population and changing ethnic composition of the MAs (above all, the rapid 'Lithuanisation' of the area surrounding Vilnius City) leads us to expect that there will be increasing social segregation, which, most importantly, has an ethnic dimension to it. It has been already confirmed that ethnic minorities participate less in suburbanisation and overall migration processes. This suggests that ethnic minorities may not have equal socio-economic positions in society because suburbanites often have a higher socio-economic status and, respectively, incomes. On the other hand, this might also indicate that different cultural (ethnic) groups have different locational priorities. A preliminary analysis of the occupational structure on the individual level showed that, in fact, ethnic groups are not equally represented among different occupational groups, especially in Vilnius City (Table 6.2). Differences in the second-tier cities of Kaunas and Klaipėda are not that clear and not always one-sided.

	VILNIUS		KAUNAS		KLAIPĖDA	
Ethnicity	High ISCO	Low ISCO	High ISCO	Low ISCO	High ISCO	Low ISCO
Lithuanian	54.9%	14.7%	41.5%	26.6%	35.3%	30.3%
Polish	25.0%	38.7%	42.9%	30.1%	33.9%	30.4%
Russian	34.3%	31.1%	31.8%	35.6%	26.4%	39.0%

TABLE 6.2 Percentage of employed population belonging to the highest and the lowest occupational groups in the major cities
Source: Statistics Lithuania (2011)

Different proportions of ethnic groups in the occupational structure indicate that there should be an ethnic dimension in the social stratification of urban societies. The links between ethnic groups and their socio-economic (occupational) status are uneven between different cities. The biggest differences were observed in the capital city, while the differences are considerably smaller in the second-tier cities. A comparison of Table 6.1 and Table 6.2 suggest that the larger the ethnic minority group in a city, the larger the share of its representatives who belong to a low status group. For instance, in multi-ethnic Vilnius City, Lithuanians have considerably better positions in the labour market than Poles and Russians, while there are no differences between the Polish and

Lithuanian groups in Kaunas and Klaipėda, where the Polish community is small. As well as other factors, this could be related to the specific labour market in the capital city, where there are many jobs in state administrative institutions that often require good knowledge of the Lithuanian language, which might be a problem for ethnic minorities that prefer to obtain an education in Russian- or Polish-language schools. It could also have to do with the historically established position of the Polish minority in more peripheral and rural parts of the Vilnius MA.

The numbers presented in Table 6.2 suggest that there might be a significant overlap between the distribution of the lowest status occupational group (represented by unskilled workers according to ISCO categories) and the Polish minority in Vilnius City. Figure 6.4 shows a very obvious overlap. The concentration of both unskilled workers (expressed by local quotients, which indicate the differences between the share of a particular group in a census tract relative to the city average) and the Polish minority was the highest in the southern industrial part of the city (along and behind the main railroad line) and in previous industrial or rural satellite settlements[34] in the northern parts. There is also an overlap between low-status occupational group and the Russian minority, but to less of a degree; it can be seen in Table 6.2 and Figure 6.4. These results suggest a strong socio-ethnic division in Vilnius City. We will explore it further in the next section by using individual-level data.

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34   Rural settlements are in most cases towns with a few hundred residents that used to serve as centres of Soviet agriculture and/or local administrative units.
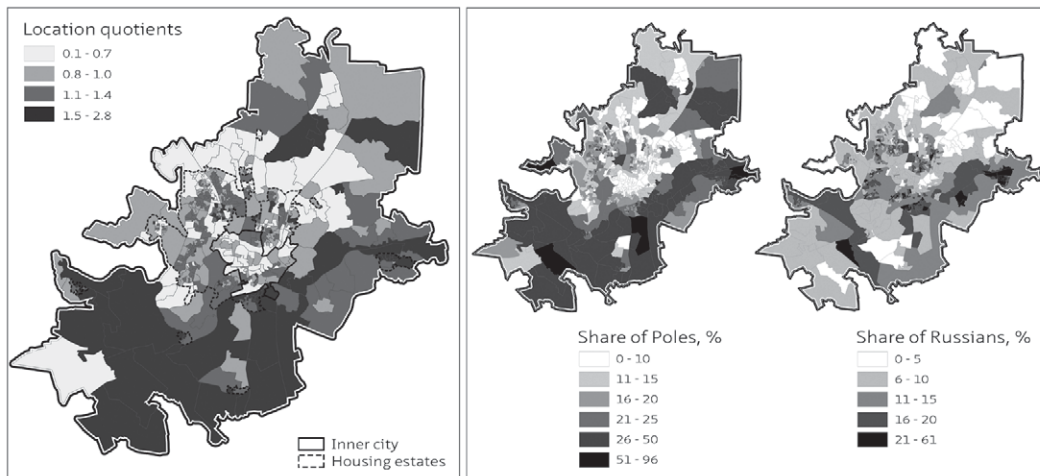
FIGURE 6.4 The concentration of the low-status occupational group (left) and Polish and Russian minorities (right) in Vilnius city municipality on the census-tract level in 2011
Source: Statistics Lithuania (2011)

The social dimension of ethnic differentiation in metropolitan areas

This section does not deal directly with the spatial patterns of the distribution of ethnic minorities. The primary task of this section is to verify the findings that suggest links between ethnicity and the socio-economic status of residents. These links logically mean that social segregation should also have an ethnic dimension. In this case, different social groups, as well as different ethnic groups, tend to live separately. On the other hand, we cannot state that ethnicity is a factor of segregation. It is more likely that ethnic segregation is a consequence of the different social status of ethnic groups. Analyses of the major Lithuanian MAs, where ethnic groups have different socio-economic positions, support this claim; we found a great spatial coincidence between occupational status and ethnicity.

The links between the distribution of ethnic and occupational groups, established in the previous section (Table 6.2 and Figure 6.4), indicate that ethnic groups occupy different social positions in the different MAs, with Vilnius being the most unique case. The situation in the second-tier cities is not as straightforward and socio-economic differences between different ethnic groups seem to be less evident. A series of logistic regression models were run to explore whether there are significant socio-economic differences between individuals belonging to different ethnic groups. In the models (not shown due to a large scale) we used the following set of dependent variables: high-ranking occupation, low-ranking occupation, and university education. Only residents

over the age of 18 were included in the analysis. Every model controlled for gender, age, and unemployment, which are theory-guided variables. All the results presented below have the highest significance levels ($p < .001$).

As we had expected, the results of the regression analysis showed that ethnic minorities are more likely to have weaker positions in the labour market than ethnic Lithuanians. This was particularly evident in the case of Vilnius. The reason may lie not in the exceptionally low-level positions of ethnic minorities, but in the exclusive positions held by Lithuanians in the capital city compared to the rest of the country. The capital city provides the best jobs and attracts the most prosperous population; unsurprisingly, around 45% of the income tax of Lithuania is collected in Vilnius, while its inhabitants make up less than 18% of the population (State Tax Inspectorate, 2014). Our results show that for Lithuanians the probability of having a high-ranking occupation in Vilnius City is 2.9 higher than for other ethnic groups, while this probability is only 1.5 times higher in the rest of the country. This probability is different for different ethnic groups and among the MAs. For example, compared to Lithuanians, the probability of having a high-ranking occupation is 2.5 times lower for Russians and even 3.6 times lower for Poles in the Vilnius MA. At the same time, ethnic minorities have relatively higher chances of having a high-ranking occupation in the Kaunas and Klaipėda MAs (e.g. Russians have a 1.6 times lower probability of having a high-ranking job than Lithuanians).

Ethnic minorities have fewer well-paid jobs in all the cities, but the differences are much smaller in the second-tier cities. Similarly, compared to Lithuanians, the probability of having a low-ranking occupation is higher for ethnic minorities, though the differences are considerably smaller. The probability of having a low-ranking occupation is 2 times higher for Russians and 2.9 times higher for Poles in the Vilnius MA but there are no substantial differences between ethnic groups in the other MAs. We can sum up that the only notably high ethnic disproportion is in the high-status job market, where Lithuanians are highly overrepresented. Lithuanians dominate among managers and high-skilled professionals in all the MAs and especially in Vilnius. Ethnic minorities are overrepresented among unskilled workers, though the degree of this disproportion is less visible in the second-tier cities.

We found that ethnic background also has an effect on the housing conditions of residents. There may be several reasons for this: different incomes, an inherited overrepresentation of Russians in Soviet housing estates (like in many post-Soviet cities in the Baltics), and the domination of Poles in the rural region surrounding Vilnius City, where single-family dwellings dominate. Differences are especially large in the multi-ethnic and most dynamically changing Vilnius MA. The case of Klaipėda once again illustrates the relatively better position of the Russian minority. The results

show that Lithuanians have a higher probability of living in post-Soviet housing (2.7 times higher in the Vilnius MA, 1.6 times in the Kaunas MA, and just 1.1 times in the Klaipėda MA), while Russians, compared to other ethnic groups, have a higher (3.1 times) probability of living in Soviet housing estates in Lithuania overall, which is similar to other post-Soviet states (Hess et al., 2012).

Although we did not attempt to explain the reasons for the established socio-ethnic segregation and socio-economic dimension of ethnic differentiation, some conclusions can be made based on our results. Alongside the ethnic dimension of occupational segregation, we also found that there are big differences between ethnic groups in terms of their education level. In general, the higher education levels of Lithuanians can be regarded as one of the reasons why they prevail among high-ranked professionals, especially in the Vilnius MA. Compared to Lithuanians, the probability to having a university education is 1.8 times lower for Russians and 3.7 times (!) lower for Poles in the Vilnius MA, while differences in the other MAs are minimal. The more disadvantaged positions of Poles in the Vilnius labour market may be related to their lower education levels. We cannot confirm but can only hypothesise that this situation is related to the weaker competitive power many ethnic minorities have in the competition for a university education (above all in the social sciences). Their skills in the Lithuanian language are poorer and this could be a barrier for those members of an ethnic minority living in one of the bigger cities who have the opportunity to receive their secondary education in their native language, which while it helps them to maintain a stronger cultural identity, may threaten their future careers. This hypothesis is partly confirmed by the following regression analysis, where occupational status and mother tongue, instead of ethnicity, are included (the following results have the highest significance levels, $p < .001$). In the Vilnius MA, the probability of having a high-ranking occupation for Polish residents whose mother tongue is Lithuanian is 2.3 times lower than that of ethnic Lithuanians (instead of 3.6 times lower in the case of the Polish minority as a whole). The probability of this group having a university education is 2.4 times lower than that of Lithuanians (instead of 3.7 in the case of the whole Polish minority). Similar results were obtained when the indicators of low-ranking occupation and education were calculated. Language skills are not the only factor that might explain the existing social differences. Other factors may have to do with historical development (the case of path dependency); for example, the traditionally dominant role of the Russian minority in an industrial sector, where a university education was not required, or the repatriation of the most educated and wealthy Poles after the Second World War.

The results described above were further verified and confirmed by correlation analysis. We used aggregated data on the census-tract level to explore the relationships between the share of a certain ethnic group and the share of people with a high-ranking

occupation. The results showed that the higher the proportion of ethnic minorities in a city, the stronger the relationship between the share of an ethnic group and its social status. In Vilnius, the share of Lithuanians has a strong and positive correlation with the share in a high-ranking occupation ($r = .83$, $p = .000$). Correlations with this variable are also strong for the share of Poles ($r = -.73$, $p = .000$) and Russians ($r = -.56$, $p = .000$), but they are negative. These results confirm the earlier calculations and the results obtained by cartographic analysis. The correlations are not evident in Kaunas (for Lithuanians $r = .10$, $p = .019$ and for Russians $r = -.11$, $p = .014$), while Klaipėda is in an intermediate position (for Lithuanians $r = .33$, $p = .000$ and for Russians $r = -.35$, $p = .000$).

To sum up, under such socio-ethnic stratification it is not a surprise to find ethnic segregation as well. As we can see, the situation can differ substantially in different areas, depending on a community's size and historical context. In most cases in Lithuania, especially in Vilnius, ethnic minorities are in disadvantaged socio-economic positions, and there is little chance that ethnic differentiation and segregation will decrease in the near future. Recently published data (Antanavičius, 2015) on the changes in housing prices in Vilnius districts during recent years support such expectations. Notwithstanding the general increase in housing prices in Vilnius, the prices of apartments in districts with a higher concentration of lower-income occupational groups and ethnic minorities (first of all, the southern part of Vilnius) actually decreased. Ethnic minorities with low income might be forced to further concentrate in these areas due to the lower prices. Thus, ethnic segregation, along with a more general social segregation, should continue to increase. The situation in the other two MAs will remain much more stable and in-migration should even reduce the existing concentration of ethnic minorities in some areas, unless more profound changes in international migration start to play a more serious role. Unfortunately, there is no reliable information concerning housing prices and their recent changes in Kaunas and Klaipėda, but we may expect that a low socio-ethnic division and lower housing prices will lead to a much smaller, or no, concentration of ethnic groups there.

The results of the above statistical analysis support our study of socio-ethnic segregation developed throughout this paper. Therefore, the statement that there is an ethnic dimension to social (socio-economic) segregation can be confirmed.

Conclusion and discussion

In this paper, we explored socio-economic differences between the main ethnic groups and how these differences are spatially expressed in the Lithuanian MAs. Our results confirmed the hypothesis that social segregation had a strong ethnic dimension and that the strength of this relationship varied between the MAs. Cartographic analysis, regression models, and correlation analysis showed that there are clear links between ethnicity, social status, and spatial distribution, but the strength of the link varied between different MAs. The bigger the MA and the more numerous the ethnic minority, the less favourable the ethnic minority's socio-economic positions and housing conditions were compared to Lithuanians. The similarity of the results of analyses based on different methodological approaches validates our main findings and the suitability of the methods used to analyse segregation processes.

The ethnic landscapes in the MAs in Lithuania are considerably different compared to one another and to other post-Soviet or even Baltic cities. Therefore, we can state that there is no single type of post-Soviet city in the sense of place, status, and distribution patterns of ethnic minorities. However, ethnic minorities usually reside in less favourable locations in many metropolitan cities, notwithstanding the historical differences in the development of the ethnic landscape. Our findings are consistent with the trends observed in many European capital cities (Marcińczak et al., 2015; Tammaru, Marcińczak, et al., 2016). Growing social inequalities in the Vilnius MA result in growing spatial differences and the most affluent and mobile groups are becoming the most isolated ones. At the same time, ethnic minorities, on average, have lower social positions and remain concentrated in less attractive places created by the Soviet regime. Expanding wealthier groups are concentrated mostly in the suburbs. This situation is similar to the one observed in Tallinn (Tammaru, Kährik, et al., 2016), but differs from Riga, where the Russian population constitutes a strong majority and Soviet housing estates have a better image (Krišjāne et al., 2016). The growing social differences and resulting segregation of ethnic groups are making Vilnius more and more like other European capital cities (van Kempen & Özüekren, 1998), though the history of the development and initial socio-economic positions of ethnic minorities differ substantially. Socio-economic differences between ethnic groups are much smaller in the second-tier metropolitan areas of Lithuania. Therefore, growing social inequalities do not result in visible ethnic segregation. Ethnic spatial differentiation is diminishing within these MAs, suggesting that ethnicity itself does not have a tremendous impact on social positions and that certain structural factors (i.e. education and integration) may be much more important; the process of integration should be slower for numerically larger communities. The current socio-economic positions of the ethnic minorities analysed in Vilnius tend to reinforce socio-

ethnic segregation, especially in cheaper neighbourhoods with decreasing housing prices, where ethnic minorities are already highly overrepresented. This also means that the increasing spatial separation of these groups will serve to further decrease the integration process. The growing proportion of Russians found in the suburbs of Klaipėda also confirms that the dominant factors of spatial behaviour (when choosing a place of residence) are economic rather than cultural in nature. Although in this study we did not focus on the causes of ethnic segregation, our findings suggest that the reasons for the less favourable positions of ethnic minorities are not rooted in any discriminatory policies, since there are no essential regional differences in this field in different MAs.

We assume that the exceptionally strong link between ethnic and social segregation in the Vilnius MA appeared primarily as a result of its status of the capital city. Thus, it is likely that the reasons for segregation are related not to the exceptionally low positions of ethnic minorities here, but to the much higher position of Lithuanians. Vilnius attracts the most educated and richest residents from around the country, the absolute majority of whom are Lithuanians. This situation increases social inequalities not only between ethnic groups inside the MA, but also nationwide. Moreover, the existing spatial segregation in the Vilnius MA is also a result of the historical circumstances of the 20th century: the largest number of ethnic minorities was concentrated in Vilnius and its surrounding region (often in less favourable locations); industry, low-skilled services, and agriculture were the main job providers for ethnic minorities in the Soviet era, when the income difference between jobs was minimal. The current lower socio-economic positions, which ethnic minorities obtained after independence, reinforce this situation.

While ethnic residential differentiation is decreasing at the mezzo level (LAU 2 regions) even in Vilnius, neither the 'grand divide' between the south and the north nor divisions at the micro level appear to be on the decline. On the contrary, in many cases they are tending to grow and this means that ethnic groups are tending to live in greater isolation from each other. An increasing concentration of ethnic minorities with lower socio-economic status in the southern part of Vilnius City might lead to negative social effects for the whole MA in the near future. Neither social differences nor the spatial patterns of ethnic minorities are clearly manifest in the Kaunas and Klaipėda MAs. Moreover, inner migrations might reduce the existing patterns of low socio-ethnic differentiation in the near future.

The likelihood that the prevailing neo-liberal economic policies in the country will subside in the near future is limited. Therefore, a planning and construction policy should aim to create more attractive residential places in the southern part of Vilnius municipality and prevent the construction of low-quality and dense housing estates

in less attractive places. However, as there are no common administrative tools for planning and developing, such spatial units as a regional level of administration does not exist in Lithuania, rational and sustainable planning of all the three MAs comprising several municipalities is, unfortunately, not likely in the near future.

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