### MINORITY ETHNIC GROUPS IN THE LARGEST CITIES OF LATVIA

### MAZĀKUMTAUTĪBU ĢEOGRĀFIJA LATVIJAS LIELAJĀS PILSĒTĀS

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### Abstract

Spatial segregation of minority ethnic groups is a returning issue in public and political debates across many parts of the world. The degree of spatial concentration and segregation of ethnic minorities in European cities is well documented. However, despite Latvia's diverse migration history and relatively high minority population, particularly in the largest cities, these issues have received scant attention. This study examines the residential patterns of minority ethnic groups, presenting data on the levels and dynamics of urban residential segregation. The study includes five ethnic minorities: Russians, Belarusians, Ukrainians, Poles, and other ethnicities. We adopted a widely used methodology to examine changes in ethnic residential segregation between 2000 and 2019. The information comes from the 2000 census and the population register. We are confident in stating that overall ethnic residential segregation levels do not appear to be increasing. However, there are some differences not only between ethnic groups in the same city, but also between similar groups in different cities. Furthermore, demographic change reinforces both minority representation in established residential patterns and ethnic segregation in urban Latvia as a whole. Certain characteristics of the Latvian context, such as the dominance of owner-occupied dwellings and relatively low residential mobility, may explain the findings.

Keywords: urban segregation, ethnic minorities, population geography, index of segregation

### Introduction

The increasing ethnic diversity of European societies has generated an important academic debate regarding the integration of migrant communities into host societies (Benassi et al. 2022). Although large-scale immigration in Latvia has been over for at least three decades, its impact is still reflected in the ethnic composition of the population, which is also unevenly distributed across the country. Thus, patterns of segregation are the outcome of the complex interplay of individual, institutional and structural factors, as well as historical place specific legacies (Boterman et al. 2018). There is the wide array of dimensions that segregation studies deal with, and a variety of social interactions and inter-ethnic encounters in numerous domains (van Ham and Tammaru 2016). The ethnic geography of cities has attracted much scholarly attention

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for almost a century, much of it focusing on the extent to which members of individual ethnic groups are concentrated in particular parts of the urban fabric. Globally, previous studies confirmed the relatively low levels of segregation in European cities compared to those in the US (van Ham et al. 2021). Although a great deal of work has been done by geographers on the residential segregation of ethnic groups within cities, covering a wide range of places and contexts, relatively little of this has been explicitly and rigorously comparative at the national level. Most of the previous studies focus on large metropolises, and there are comparatively few studies of segregation at the national level addressing urban segregation in second-tier cities (Marcińczak et al. 2012; Šimon et al. 2021). Besides, ethnic segregation still remains a modestly studied aspect of urban segregation in post-socialist cities (Ladányi and Szelényi 2001; Gentile and Tammaru 2006; Hess et al. 2012). This study aims to evaluate ethnic geographies in the nine largest cities of Latvia using individual-level geo-references compatible data that explicitly allow comparative studies.

Most recently, the impact of the COVID-19 pandemic cannot be underestimated in analysing the residential patterns of ethnic minorities. The COVID-19 pandemic has massively affected the lives of people around the world for more than two years now. Same as the COVID-19 pandemic is not shared equally across geographic areas, so many other important urban social phenomena, including segregation, gentrification, and inequalities in ethnicity, wealth and income reveal spatial disparities (Zhai et al. 2021). Recent studies suggest that the burden of COVID-19 morbidity may be hardest felt in disadvantaged and segregated places and could reinforce the existing ethnic inequalities (Berkowitz et al. 2021; Yang et al. 2021). The available data do not allow us to analyse changes and geographic differences in the health outcomes of ethnic minorities in Latvia. However, the findings of this study offer empirical knowledge on the residential patterns of ethnic minorities and can also provide useful insights into public health behaviour.

In the following, we first present a brief description of ethnic minority formation in Latvia. The next section outlines the data and methods. This is followed by a descriptive analysis of the segregation levels and residential concentrations of minority ethnic groups in the nine largest cities of Latvia. The last part concludes this work with key findings.

### Overrepresentation of minority ethnic groups in urban Latvia

This study investigates the minority ethnic groups in urban Latvia, and therefore this section describes the key points of ethnic minority formation and residential patterns. Latvia is an ethnically diverse country with more than 160 different ethnicities that could be found among the inhabitants of the country. However, the

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ethnic composition was significantly affected by the Soviet-era migration, urbanisation, and industrialisation policies. Latvia was part of the Soviet Union between 1944 and 1991, and during this period experienced large-scale immigration, mainly from Russia. During the 1970s and 1980s the share of Belarusian and Ukrainian immigrants increased (Monden and Smits 2005). Ethnicity in the former Soviet Union, was an additional element of urbanisation and socio-spatial differentiation. Immigration was part of a deliberate political and ideological agenda used to disperse predominately Russian-speaking workforce through 'organized channels' of migration (Lindemann 2013). The related processes of immigration and industrialisation, and the central allocation of housing, led to overrepresentation of minority ethnic groups in the urban areas (Gentile and Sjöberg 2010). In addition, large prefabricated high-rise housing estates in the major cities were the main place of residence for ethnic minorities (Kährik and Tammaru 2010; Hess and Tammaru 2019). The societal changes and economic reforms in the 1990s have placed ethnic minorities in a new situation that substantially alters inherited patterns of labour market and housing segmentation from the Soviet period (Hess et al. 2012). Therefore, Latvia with sizable ethnic minority population, where the large-scale immigration stopped more than three decades ago, provide an interesting starting point for studies of ethnic segregation. Nevertheless, until the present-day rare studies exist on residential patterns of ethnic minority groups in Latvia (Krišjāne et al. 2016; Bērziņš et al. 2021). In 2019 ethnic minorities form considerable share (about 38%) of the Latvian population.

We restrict our description of minority ethnicities in urban Latvia to the five largest groups: Russians, Belarusians, Ukrainians, Poles, and others (including those who have not indicated their ethnicity). The main ethnic groups are strongly concentrated in the nine largest cities of Latvia housing almost 52% of the country's nearly 2 million inhabitants and 76% of the urban population. In population census of 2000, in response to a question on which ethnic group they identified with, 42% of residents in the nine largest cities of Latvia defined themselves as Latvians and the same share of residents self-reported to be Russians. The share of Latvians had increased over the next two decades, whereas most of the minority ethnic group proportions decreased (Figure 1). However, it should be noted that all the largest cities and the main ethnic groups that live there have experienced a decline in population. The only exception is other ethnicities. An increase in the share of this group's population may be explained by the growing number of individuals who do not want to declare their ethnic origin or identify themselves with one or the other ethnic group. Another explanation in this regard is the positive international net migration rate of

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some new immigrant groups indicating an increase in the share among other ethnicities.



Figure 1. The ethnic composition of the residents in the nine largest cities (authors' figure based on data from Central Statistical Bureau of Latvia)

Table 1 uses the above indicated 5 separate categories of minority ethnic groups and Latvians that allow a reasonably clear picture of the changes over the past two decades. Among the ethnic minorities considered, all groups show a decline in population. Moreover, compared to Latvians, the population shrinkage of minority ethnic groups is more pronounced. The only group showing small increase is the other ethnicities. While slightly more than a half of the Latvia's population live in the nine largest cities, more than 70% Russians and Ukrainians, and more than 60% Belarusians and Poles do so (Table 1). Meanwhile, the share of Latvians living in largest cities is less than half of the total population of this ethnic group.

	Population in the 9 largest cities			% living in the 9 largest	
Ethnic group				cities per ethnic group	
	2000	2019	% change	2000	2019
Latvians	513,873	482,150	-6.2	37.5	40.3
Russians	518,306	349,352	-32.6	73.7	73.0
Belarusians	60,814	39,298	-35.4	62.6	64.0
Ukrainians	47,212	31,306	-33.7	74.2	72.7
Poles	39,314	26,262	-33.2	66.1	67.6
Other ethnicities	49,009	68,963	+28.9	59.0	68.0
Total	1,228,528	997,331	-18.8	51.7	51.9

 Table 1. The population of main ethnic groups in the nine largest cities, 2000 and 2019
 (authors' elaboration based on the data from Central Statistical Bureau of Latvia)

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Since the 2000, the significance of the nine largest cities has slightly increased for the Belarusians, Poles, and other ethnicities. For the largest ethnic minority group – Russians, the significance of the nine largest cities has slightly declined. The decrease also applies for Ukrainians. With respect to urban concentration, it can be seen from Table 1 that Russians, Ukrainians, Poles, and other ethnicities are more strongly attracted to the largest cities then are the members of Latvians and Belarusians. Regarding the other ethnicities, it should be emphasised that the new immigrant groups are more frequently settling in the largest cities, and therefore an increase in the share of this group has been evident over the past decades.

### Measuring segregation: data and methods

Applications and tools to assess residential segregation should be adapted to the objectives, scales and spatial units of analysis (Petrović et al. 2018). There is extensive literature on the measurement of ethnic residential segregation, with a substantial number of separate indices representing one or more segregation dimensions and providing one-number summaries (i.e. global indices) for the whole study area (Massey and Denton, 1988). Residential segregation usually is conceptualised as the degree of spatial separation between two or more population groups in a given context (Yao et al. 2019). These indices are easy to interpret and investigate segregation dimensions, allowing for comparative analysis across the urban system (Reardon et al. 2008). However, these indices are typically descriptive and do not capture complex residential patterns across analysed groups (de Bézenac et al. 2021). Thus, segregation measurements must be seen within a broader social and historical context, reflecting past dependencies and politics of space.

The data used in this contribution are based on the census (2000) and population register (2019). Both data sets are provided by the Central Statistical Bureau of Latvia, ensuring appropriate anonymization of the individual-level geo-referenced data. In 2000, the population census was collected using a survey. Data on minority ethnic groups for 2019 was drawn from the population register. This census and register data contain highly accurate demographic information and are compatible with the adopted spatial scale. As mentioned, the provided data on minority ethnic groups distinguish ethnicity based on the self-selection of individuals.

For analysing residential patterns of minority ethnic groups in the largest cities of Latvia, we focus on the Segregation Index (SI) because that is the most frequently used nationally and facilitates comparative urban analysis (Bolt et al. 2008; Boterman 2020). For each of the main minority ethnic groups the SI of that group is calculated compared to all other ethnicities grouped together. The SI for these groups is

calculated per each analyzed city. Indexes were calculated for both years 2000 and 2019. The SI was calculated as (Massey and Denton 1988):

$$SI = \frac{1}{2} \sum_{i=1}^{n} \left| \left( \frac{x_i}{x} \right) - \left( \frac{t_i - x_i}{T - x} \right) \right| x \ 100 \qquad (1)$$

where  $x_i$  is the number of ethnic group in spatial unit i; X is the size of the ethnic group;  $t_i$  is the total number of people in spatial unit i and T is the total population in a city. The IS compares the distribution of ethnic group with the remainder of the population. The SI ranges from 0 to 100, with 0 indicating non-segregation and 100 indicating complete segregation. The SI approach is insensitive to the spatial arrangement of population and ignores the fact that segregation is not uniform within a given city.

In urban analytics, spatial data visualisation is important to communicate results effectively. The great majority of segregation studies rely on a single scale using pre-defined administrative or statistical units such as neighbourhoods, census tracts, and wards. However, administrative units are criticised because their territorial size and spatial configuration will vary from city to city (in more densely populated areas, spatial units are generally smaller) (Johnston et al. 2016; Marcińczak et al. 2021). Proximity is another important aspect as not all residents who share the same residential area, irrespective of their location within a spatial unit, are equally proximate to each other. Thus, irregularly shaped polygons and large differences in the sizes of administrative units being mapped can introduce misrepresentation. To address this issue, methods have been developed to distort the shape and size of areas by turning irregular polygons (such as neighbourhoods) into regular or hexagonal grids (Imeraj et al. 2018). It should be acknowledged that the socio-spatial division of cities can vary across scales, as the magnitude of segregation generally decreases with the growing size of analysed residential areas (either in terms of population or spatial unit) (Reardon et al. 2008). Empirical studies of ethnic segregation reveal that levels of residential segregation can also differ by ethnic group, where segregation levels change little by scale for one group while others show a significant drop at the same scale (Catney 2018).

The increased availability of grid data has stimulated the development in analysing urban segregation and allows for comparisons across different spatial scales by varying the number of units, size, or distance radius. Moreover, in the case of Latvia, publicly available spatial data on population are mostly at the municipal level. Therefore, in our case, we provide new evidence on the residential patterns of minority ethnic groups in Latvia through regular hexagon grid

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coverage. Moreover, the data used are comparable across the analysed cities and between both years. The final dataset represents a spatially fine-grained hexagon grid of a 16-ha size with estimated population counts of main ethnic groups. To visualise the uneven geographical distribution of minority ethnic groups across the studied cities, we employ the Location Quotient (LQ), which is a valuable way to quantify the concentration of minority ethnic groups within particular cities and present the intraurban differences comparing at the neighbourhood level. LQ is defined as (Brown and Chung 2006):

$$LQ = \left(\frac{x_i}{t_i}\right) / \left(\frac{x}{T}\right)$$
(2)

where,  $x_i$  and  $t_i$  are the population of ethnic group X and total population in spatial unit i; X and T are the population of ethnic group X and the total population of the city as a whole. LQ = 1 indicates that the proportion of the minority ethnic group in the spatial unit is the same as that of the city as whole; LQ >1 indicates a higher level of concentration in the spatial unit than in the city as a whole; LQ <1 indicates a lower level of concentration in the spatial unit than in the city as a whole

Finally, the location of the nine largest cities in Latvia is shown in the figure 2. As shown in the figure, the analysed cities are situated in all regions of the country. In 2019, their populations range from 22 000 in the smallest city (Jekabpils) to 630 000 in the capital Riga. It should be noted here that the settlement system of Latvia is highly monocentric, with the primacy of the capital city being about 7 times larger than the second largest city (Daugavpils). Among the second-tier cities, the population is more evenly distributed. Four second-tier cities have populations of more than 50 000, while the other four have populations ranging from 22 to 34 thousand. Minorities make up 80% of the population in Daugavpils and 15% in Valmiera, which is located in the Vidzeme region and has the lowest overall share of minority ethnic groups. Of course, the case of Daugavpils city differs greatly from that of other urban areas with a lower proportion of ethnic minorities.

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Figure 2. The location of the nine largest cities in Latvia (authors' figure based on spatial data from SIA Envirotech)

### **Results: urban segregation of ethnic minorities**

The empirical sections of this study consist of two parts. First, we analyse the segregation levels of the main minority ethnic groups in the total population of each studied city. Second, we present geographies of minority ethnic groups based on the analysis of location quotients. Answering the research question how ethnic segregation in the nine largest cities can be characterised, an important first observation is that the segregation of the ethnic minority groups distinguished takes no extreme forms (Figure 3). Separation of some major ethnic groups is certainly present, while the overall levels according to segregation index are generally low all across the studied cities. The segregation index does not take account of the spatial relationship between the hexagon bins and the level to which these units adjoin one another does not have any influence on the magnitude of the segregation index. The calculated values of a segregation index can be interpreted as the percentage of an ethnic group that would have to move out to obtain an even distribution over the spatial unit proportionate to that of the rest of the population. Comparison of the segregation index between years and between cities reveals a completely consistent pattern with respect to the differences between the five ethnic groups (Figure 3). Segregation of minority ethnic groups is comparatively stronger in the following second-tier cities of Ventspils, Liepaja, Jurmala, and Valmiera. Meanwhile, the level of ethnic segregation is comparatively lower in the capital city of Riga and in the two largest cities of

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Daugavpils and Rezekne in the most Eastern part of the country (Latgale region), with a high share of ethnic minorities. It is also clear that in general Ukrainians, Belarusians, and other ethnicities as a single group display a slightly stronger segregation than other minority ethnic groups, such as Russians and Poles. However, the level of ethnic segregation varies between the different groups in the studied cities although in most cases the differences are not substantial.



Figure 3. Segregation index of minority ethnic groups in the nine largest cities (authors' figure based on data from Central Statistical Bureau of Latvia)

Looking at both years for which data were available (2000 and 2019), the most striking fact is that the segregation of ethnic minority groups in studied cities has

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remained stable over time. Apparently, it is not the case that the minority ethnic groups spread over the analysed cities to an increasing extent. Only in the capital city of Riga and, to a lesser extent, in Liepaja and Valmiera were some signs of a slight increase in the segregation of all the analysed minority ethnic groups. In the other largest cities, there is evidence of reasonably stable levels of ethnic segregation. The only exception, where some cities have seen the most profound changes, are other ethnicities. Therefore, there would be a need for further detailed analysis of the ethnic groups whose populations have changed most rapidly because of demographic change and/or international net migration.

### **Results: geographies of ethnic minorities**

Segregation is inherently geographical and ethnic groups generally form distinct patterns of over- and under-representation across residential space. The resulting urban mosaic is often described with different terms of spatial expression and related processes – ethnic enclave, ghetto, gated community, gentrified community etc. (Brown and Chung 2006). First, we focus on the location quotients measured as mean values for each minority ethnic group per city (Figure 4).



Figure 4. Box plots of the mean LQ values per each city for minority ethnic groups (authors' figure based on data from Central Statistical Bureau of Latvia)

The interpretation of mean values of the LQ in box plots for minority ethnic groups across the studied cities leads to a conclusion that the highest levels of residential concentrations are calculated for the smallest ethnic groups in terms of population size – Poles, Ukrainians, and other ethnicities. Similarly, the range of

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variation in estimated mean LQ values between the cities is highest for Poles and other ethnicities. The lowest residential concentrations were found for Russians, the largest ethnic minority in Latvia. For some minority ethnic groups, such as Russians, Belarusians and Poles, the levels of residential concentration have slightly increased over the past two decades. In general, the observed changes are very small, which means that the residential patterns of minority ethnic groups are relatively stable over time.

The remainder of this section maps the landscape of minority ethnic groups in the selected cities or examples of the case studies. First, the second largest city of Daugavpils, where ethnic minorities make up nearly 80% of the city's population. The city is located in the eastern part of the country and is ethnically diverse, and apart from the largest minority of Russians, it is home to significant numbers of Belarusians, Poles and Lithuanians of Latvia.



Figure 5. LQ maps for the ethnic minorities in Daugavpils, 2000 and 2019 (authors' figure based on data from Central Statistical Bureau of Latvia)

The location patterns of all ethnic minorities reveal a relatively even distribution across all urban neighbourhoods with a lower presence in the historic city centre or inner-city areas (Figure 5). Minority ethnic groups are over-represented in the Sovietera housing estates. Comparing LQ results, there are persistent patterns, as residential concentrations of minority ethnic groups in the urban neighbourhoods have not

changed much over the studied period. Here it would be essential to look at the age structure of minority ethnic groups and rates of residential mobility to grasp this persistent trend.

The next city discussed is Ventspils, which, unlike Daugavpils, is located on the Western coast of the Baltic Sea and can be described as Latvia's most ethnically segregated city. The port and railways played an important role in the city's economy, and the urban morphology was influenced by Soviet industrialisation and subsequent labour immigration. The city has neighbourhoods where residential development has been linked to port, railway and industrial development and where minority ethnic groups are still highly concentrated and over-represented, as confirmed by the following LQ maps (Figure 6). Similarly to the case of Daugavpils, there have been no significant changes in the residential concentration of ethnic minorities in Ventspils. The following maps show some clustering of minority ethnic groups in the Northern part of the city. In the case of Daugavpils and Ventspils, the marked decrease in the levels of segregation index for other ethnicities has not affected the residential concentration of all minority ethnic groups when aggregated.



Figure 6. LQ maps for the ethnic minorities in Ventspils, 2000 and 2019 (authors' figure based on data from Central Statistical Bureau of Latvia)

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Finally, the Latvian resort city of Jurmala is analysed (Figure 7). In contrast to the two cities discussed previously, opposite processes have coincided: a slight spatial dispersion of ethnic minorities outside the concentration areas in the largest housing estate in the Western part of the city (Kauguri neighbourhood); and a slight increase in concentration in the residential areas of private houses, villas, and luxury apartments in the eastern part of the city (closer to Riga). This means that there is a housing segmentation among minority ethnic groups. In the case of Jūrmala, the concentration of ethnic minorities in Soviet-era large-scale housing estates is not a straightforward pattern. Jurmala holds a unique position in the Latvian housing market, which was formerly influenced by the issuing of temporary residence permits to residents of foreign countries, particularly those of Russia, Belarus, and Ukraine, as well as Central Asian nations. This has also impacted the ethnic geographies of the city and must be considered. For future research, additional in-depth investigation is required here.

2000



Figure 7. LQ maps for the ethnic minorities in Jurmala, 2000 and 2019 (authors' figure based on data from Central Statistical Bureau of Latvia)

In future research, it is worthwhile to map the distribution of specific ethnic groups in Latvia's largest cities across urban neighbourhoods. However, it would also be beneficial to overlook the segregation dimension, which depicts the level of ethnic segregation between pairs of ethnic groups.

### Conclusion

This study takes a geographic and comparative approach to compare and describe the unequal distribution of minority ethnic groups over urban neighbourhoods in the nine largest cities of Latvia. The study contributes to the understanding of the patterns of ethnic residential segregation that have developed over time because of various historical events and urban transformations. We also wanted to find out whether and what changes have taken place in the more recent period of less than 20 years since 2000. Geo-referenced grid data of census and population register were used to compute aggregated measures of segregation and spatial concentration. In this way the paper addressed the current concerns on social cohesion and fragmentation in urban areas related to increasing diversity of European populations. The main findings of this study draw attention in using of easily interpretable and comparative segregation measures that account for complex geographies and increasingly diversifying urban populations. By means of two widely used measures of segregation, this paper documents in detail and for the first time the current level of minority ethnic segregation and residential concentration in the nine largest cities of Latvia as well as the main trends over the last two decades.

According to earlier studies of the Chicago School of urban sociology, such as the seminal contributions of Robert Park and Ernest Burges (e.g. Park 1915) claims that the segregation of ethnic groups should decline the longer they stay in the receiving society. Moreover, many former immigrants manage in the course of time to improve their status through social mobility. Thus, bearing in mind the ideas of the Chicago School and knowing that most ethnic minorities in Latvia have lived for a long time and for several generations, a decline in segregation in the nine largest cities ought to be evident. However, segregation levels for the main ethnic minority groups in the largest cities of Latvia have been remarkably stable over the past 20 years. The analysed measures of segregation and spatial concentration conceal powerful persistence in the distribution of ethnic minority groups in Latvia. In all the studied cities, ethnic minority groups have penetrated the urban neighbourhoods of the Sovietera housing estates. Ethnic residential segregation occurs throughout urban Latvia, but its levels and patterns of residential concentration largely vary – by ethnic group, by the relative size of that ethnic group in the city being studied, by the size of that city, by its ethnic diversity, and by its location. The overall conclusion from the overlooked

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variances is that segregation levels have slightly declined for the largest ethnic minority group – Russians. In contrast, most other ethnic minority groups in Latvia over the 20-year period became a bit more separated. The comparative urban analyses of ethnic residential segregation reported here have provided evidence regarding the level of segregation of the four main ethnic groups in the nine largest cities at the beginning of the twenty-first century. For all four, segregation levels and residential concentrations were expected to be highest in the capital city of Riga where the ethnic groups were most numerous. However, the level of segregation and residential concentration of minority ethnic groups in Latvia's most populous city of Riga is lower compared to almost all second-tier cities, with Ventspils and Liepaja (in the Western part of the country) having the highest indices, while the ethnically diverse Latgale region (Daugavpils and Rezekne in the East) had lower indices, as ethnic minorities make up a clear majority of the urban population there.

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### Kopsavilkums

Daudzviet pasaulē un Eiropā mazākumtautību izvietojumam un dzīvesvietu izvēlei tiek pievērsta pastiprināta uzmanība, jo tas ir aktuāls sociālo nevienlīdzību un polarizāciju ietekmējošs faktors, kā arī cieši saistīts ar starpvalstu migrācijas aktuālajām tendencēm. Eiropā ir plaši pētīti mazākumtautību izvietojuma un telpiskās nošķiršanās jautājumi, bet Latvijā tiem tikpat kā nav pievērsta uzmanība. Tas ir nedaudz pārsteidzoši, ņemot vērā salīdzinoši lielo un etniski daudzveidīgo mazākumtautību iedzīvotāju skaitu. Pilsētnieku vidū mazākumtautības veido lielu iedzīvotāju īpatsvaru, kas gan ir visai atšķirīgs, salīdzinot rakstā aplūkotās deviņas Latvijas lielpilsētas. Šis pētījums aplūko mazākumtautību izvietojuma iezīmes un nošķiršanās pakāpi lielajās pilsētās dzīvojošo vidū, kā arī sniedz atbildi par notikušajām izmaiņām kopš 2000. gada. Pētījumā analizētas četras lielākās mazākumtautības Latvijā: krievi, baltkrievi, ukraiņi, poļi un citas mazākumtautības. Darbam izmantoti gan 2000. gada tautskaites dati, gan 2019. gada iedzīvotāju reģistra dati par mazākumtautībām. Iegūtie rezultāti parāda aplūkoto tautību nošķiršanās pakāpi un ģeogrāfiskā izvietojuma raksturu Rīgā, Daugavpilī, Liepājā, Jelgavā, Jūrmalā, Ventspilī, Rēzeknē, Valmierā un Jēkabpilī.

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