

MAPPING THE RESIDENTIAL GEOGRAPHIES OF ETHNIC DIVERSITY IN INNER RIGA

Sindija Balode, Māris Bērziņš

Introduction

Ethnically diverse urban neighbourhoods are a new and growing feature across Europe (Steele & Abdelaaty 2019; Benassi et al. 2023; Catney et al. 2023). Both voluntary and forced migration are significant drivers of this shift, contributing to a rise in multi-ethnic populations and leading to a growing share of ethnically diverse urban neighbourhoods, often demonstrating stable mixing patterns of minority groups (Catney 2021). Since residential segregation is sometimes incorrectly perceived as ethnic diversity (Catney 2021), it is important to employ spatial analysis to examine ethnic group residential patterns to understand and address the associated risks of spatial inequality.

Patterns of segregation are an outcome of a complex interplay of individual, institutional, and structural factors, as well as historical place-specific legacies (Boterman et al. 2021). Segregation studies encompass a wide array of dimensions, examining various social interactions and interethnic encounters across multiple domains (van Ham and Tammaru 2016). The ethnic geography of cities has attracted much scholarly attention for almost a century, with an emphasis on the extent to which members of individual ethnic groups are concentrated in particular parts of the urban fabric.

Moving behaviour, predominantly determined by demographic and economic factors, is also affected by ethnic composition, but its effect varies across contexts. While some studies find clustering tendencies by recent migrants (Bolt 2010), others find that neighbourhood's ethnic composition is not always of significance in migrants' residential decision-making (Tindale 2021). Ethnic inequality in spatial behaviour being linked with a person's perception of their position within society (Järv 2021) may partially help explain these ambiguities.

Multi-ethnic neighbourhoods tend to have younger populations, and this applies to both their foreign-born and native-born residents (Catney 2021; Hårsman 2006). This is a crucial aspect in the context of widespread aging patterns across Europe that can potentially help offset some of the challenges associated with aging populations.

While studies on ethnic diversity are more common in Western countries, where ethnic diversity is linked to postcolonialism, they remain relatively scarce in post-socialist countries, where ethnic diversity is linked to colonialism and where historically ethnic minorities were not socioeconomically disadvantaged (Hess 2019), thus it has created distinctive features.

At the time of regaining independence from the USSR, Latvia had the highest share of ethnic minorities among the Baltic States at 48 %, compared to Lithuania's 20% and Estonia's 38% (Rutland, 2023). 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 remains unevenly distributed across the country, with the most of Latvia's ethnic minority population residing in the major cities, particularly in the capital city of Riga. Despite being the largest city in Baltics, Riga is both a shrinking and an ageing city. In contrast, in its inner city, which unlike the rest of the city has a Latvian population majority, the population size is stable, and the average age is decreasing; however, it also demonstrates the fastest growth in socio-spatial differences (Krišjāne & Bērziņš 2014).

Unsurprisingly, the research focus has been on the traditional ethnic minorities, but accession to the European Union, geopolitics, and globalisation has given new importance to this research area since the geography of immigration to Latvia has undergone a profound change over the past decade. In particular, there has been diversification in countries of origin, and Indians, Uzbeks, Vietnamese, and Chinese have become ethnicities with the most considerable changes in population. This study aims to explore the residential geographies of ethnic diversity in the inner-city core of Riga and map the patterns of residential concentration for growing ethnic groups using individual-level geo-referenced population census data.

Data and methods

This study employs quantitative methods to observe the residential diversity and geographies of ethnic minorities in Riga. Data are derived from the 2011 and 2021 censuses and offer full population coverage with an ethnic group breakdown. In the Latvian census, ethnicity is primarily based on self-selected affiliations. For the classification of ethnic groups, we relied on categories with around 200 different ethnic groups used by the Latvian census. Unfortunately, the ethnic group categorisation and self-identification used by the census does not include mixed ethnicity categories. Additionally, the census provides information about residents with 'other', 'unspecified' or 'unknown' ethnic group options to self-identify from a pre-defined list. We restrict our description of ethnic diversity in Riga's inner-city core to its twelve largest ethnic groups. According to the latest census of 2021, Riga houses 613 thousand residents or around 32% of Latvia's nearly two million population. Riga has traditionally been the main attraction of investment and employment and has held significant urban primacy in the country's urban system. In 2021, Riga was home to a diverse community of foreign-born residents hailing from over 140 different countries. A significant majority of the population, comprising 83%, was born in Latvia, while the remaining 17% were foreign-born. By the share of the main ethnic groups, 47% were Latvians in 2021, while the rest were ethnic minorities.

For the spatial analysis, we used territorial units at the municipal level to measure and map Simpson's Reciprocal Diversity Index and a fine-grained regular grid of 1 ha cells to measure and map the Location Quotient. The available population data were geocoded according to the place of residence and thus linked to cells in the grid of 100 × 100 m.

The ethnic diversity of the inner-city core is formally measured and mapped using Simpson's Reciprocal Diversity Index (RDI) (Simpson 2007). The reciprocal diversity index captures and allows comparison of the diversity levels between analysed ethnic groups in inner-city neighbourhoods in both census years of 2011 and 2021. The RDI for neighbourhood i is defined as:

$$RDI_i = 1 / \sum_{m=1}^M \left(\frac{N_{im}}{N_i} \right)^2 \quad (1)$$

where there are M ethnic groups (here, 12), N_{im} is the number of people in ethnic group m in neighbourhood i and there are N_i people in total in the neighbourhood i . The index takes values between 1 and the number of groups M and can be standardized to the range 0,1 by subtracting 1 and division by $M-1$ (Simpson 2007). In the standardised index, the value of 1 represents an equal number of each group in the neighbourhood. Indices of diversity are strongly influenced by the classification of groups and by the overall population composition of the study area. A set of groups that are close in population size for the overall territory tends to have higher diversity when measured as an average across its local areas (Simpson 2007; Catney et al. 2023).

To visualise the uneven geographical distribution of the growing ethnic groups, we employ the location quotient, which is a valuable way to quantify the concentration of particular ethnic groups within an overlooked spatial scale. Quotient values equal to 1 indicate that the proportion of the ethnic group in the spatial unit is the same as that of the city as a whole; values >1 indicate a higher level of concentration in the spatial unit than in the city as a whole, and values <1 indicate a lower level of concentration in the spatial unit than in the city as a whole. All calculations and data visualisation were performed using Geo-Segregation Analyzer v.1.2 software (Apparicio et al., 2014).

Results

We explored seven inner-city core neighbourhoods – Centrs, Avoti, Brasa, Grīziņkalns, Pētersala-Andrejsala, Vecpilsēta, Skanste (Figure 1). They are all located on the right side of the river Daugava, are a part of the city's historic centre and/or its protection zone, and are separated by the railway from the rest of the city.

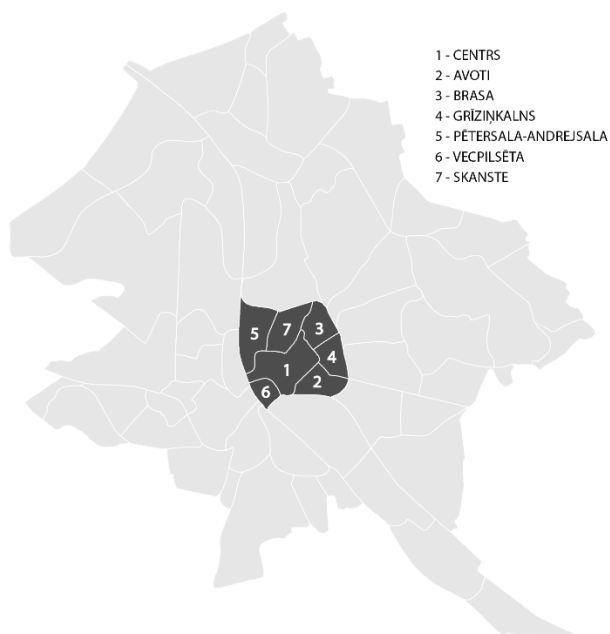


Figure 1. Map of Riga and its inner-city core (neighbourhoods listed in the order of their population size).

Table 1 presents an overview of the ethnic composition and population dynamics in Riga and its inner-city core. As of 2021, the inner-city core still had a significantly higher proportion of Latvians than the city average. The inner-city core was home to approximately 80 thousand residents or 13.1% of the total population in the city, an increase from 12.6% in 2011 (CSB 2021). Notably, the population decline in this area was slower than the overall city decline, which is attributed to the reurbanization processes. Furthermore, the aging patterns within the inner-city core diverged from the rest of the city, with the average age decreasing from 39.8 to 38.8 during the study period (CSB 2021).

Table 1. Ethnic composition and population dynamics in Riga in 2021

Source: Central Statistical Bureau data (CSB) of Latvia, (2021)

	Inner-city core	Riga city
Total population	80 thsd.	613 thsd.
Latvians, %	64.9	47.2
Ethnic minorities, %	31.5	48.4
Not specified, %	3.6	4.4
Population change, 2011-2021	-3 thsd.	-46 thsd.
Population change, %	-3.7	-6.9
Latvians, %	-3.5	-5.2
Ethnic minorities, %	-12.6	-15.0

Between 2011 and 2021, the composition of the seven largest ethnic groups in Riga's inner-city core remained largely stable, with only minor shifts in their relative positions (Table 2). However, there was a significant increase in the proportion of Latvians and a corresponding decrease in the proportion of Russians. Most other traditional ethnic minority groups shrunk or remained stable, except for Ukrainians, which experienced growth. Additionally, two new ethnic groups, Indians and Uzbeks, have emerged,

securing the eighth and ninth positions, respectively. These dynamics indicate a trend in which long-established ethnic groups tend to shrink, while newly emerging groups are experiencing growth.

Table 2. Largest ethnic groups in the inner-city core in 2011 and 2021
 Source: Central Statistical Bureau data (CSB) of Latvia, (2021)

		2011		2021			
	TOP12	Total (thsd.)	% of TOP12	TOP12	Total (thsd.)	% of TOP12	
1.	Latvians	53.82	66.2	1.	Latvians	51.94	69.0
2.	Russians	20.87	25.7	2.	Russians	16.83	22.3
3.	Ukrainians	1.65	2.0	3.	Ukrainians	1.76	2.3
4.	Belarusians	1.47	1.8	4.	Belarusians	1.34	1.8
5.	Jews	1.17	1.4	5.	Poles	0.96	1.3
6.	Poles	1.11	1.4	6.	Jews	0.76	1.0
7.	Lithuanians	0.57	0.7	7.	Lithuanians	0.52	0.7
8.	Germans	0.22	0.3	8.	Indians	0.46	0.6
9.	Armenians	0.19	0.2	9.	Uzbeks	0.26	0.3
10.	Tatars	0.11	0.1	10.	Armenians	0.19	0.3
11.	Moldovans	0.08	0.1	11.	Germans	0.19	0.3
12.	Azeris	0.07	0.1	12.	Tatars	0.10	0.1

Figure 2 illustrates the absolute changes in the largest ethnic communities in the inner-city core between 2011 and 2021. Absolute increases were observed within the Indian, Uzbek, and Ukrainian ethnic groups, while all other groups experienced declines, with Russians being the most significantly affected.

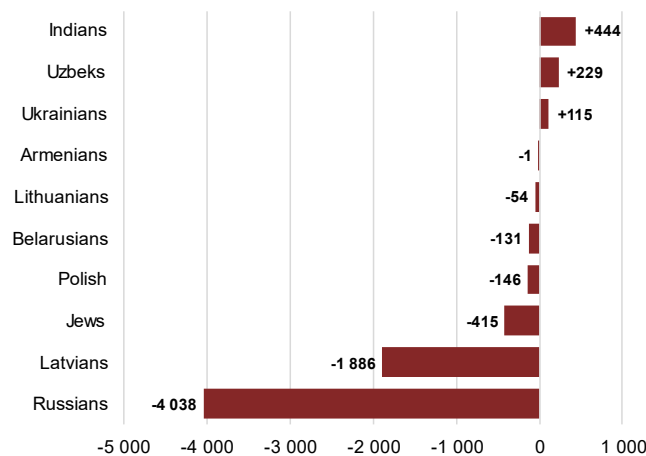


Figure 2. Population dynamics of the ten largest ethnic groups in the inner-city core between 2011 and 2021.
 Source: Authors' calculations based on Central Statistical Bureau data (CSB) of Latvia (2021).

An analysis of the population age structure in the inner-city core revealed declining trends in both Latvian and ethnic minority groups, alongside a substantial aging pattern among ethnic minorities (Figure 3), likely linked to the large Russian-speaking community. Both groups experienced a decrease in the share of 20-to 29-year-olds, although it is noteworthy that the share of men in this age group within the ethnic minority group remained relatively stable between 2011 and 2021.

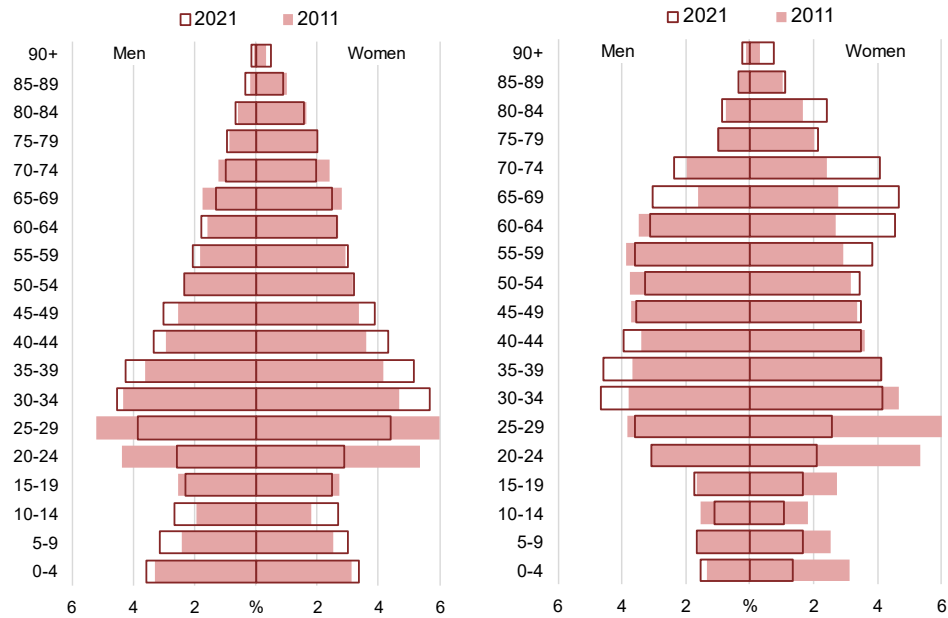


Figure 3. Population age structure in the inner-city core (left: Latvians; right: ethnic minorities).
 Source: Authors' calculations based on Central Statistical Bureau data (CSB) of Latvia (2021).

Figure 4 illustrates a divergence in the age groups of 0-14 and 45-64, with an increase observed among Latvians but a decrease observed among ethnic minorities. Both Latvians and ethnic minorities experienced a decline in the 15-29 age group, but the Latvian community was affected to a greater extent. Within the 30-44 age group, there was a positive trend observed for both Latvians and ethnic minorities, but the increase was more prominent among Latvians. For the 65-74 age group, there was a decrease in the Latvian population but an increase among ethnic minorities.

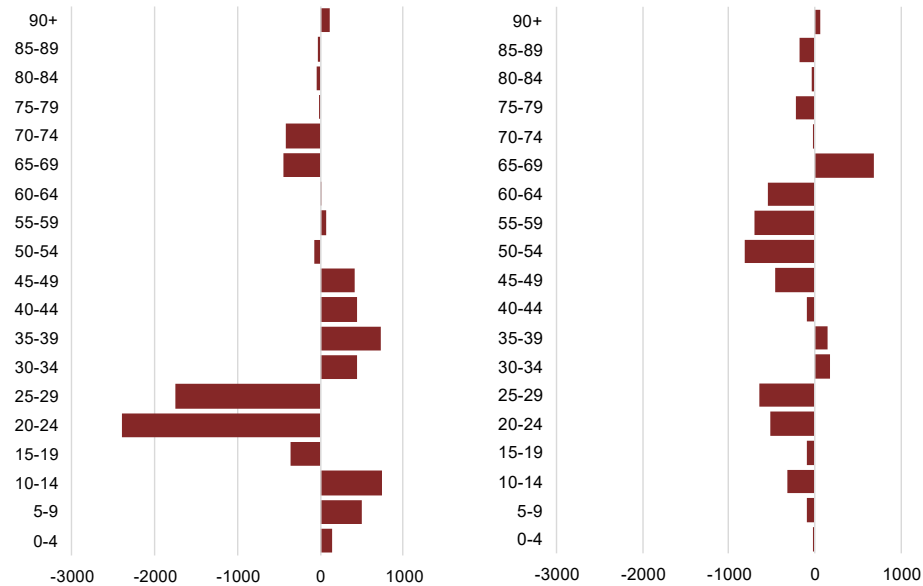


Figure 4. Population change in different age groups in the inner-city core between 2011 and 2021 (left: Latvians, right: ethnic minorities)
 Source: Authors' calculations based on Central Statistical Bureau data (CSB) of Latvia, (2021)

In the period 2011–2021, ethnic diversity in the inner-city core of Riga remained stable. The RDI slightly increased from 2.2 in 2011 to 2.3 in 2021 in the Old Town and from 2.5 to 2.6 in the northern neighbourhoods. According to Simpson’s Reciprocal Diversity Index, the highest ethnic diversity was observed in the northern neighbourhoods of the inner-city core in both 2011 and 2021. During the study period, ethnic diversity increased in Old Town but decreased in northeastern neighbourhoods due to a growing proportion of Latvians. Additionally, it was observed that neighbourhoods with the highest RDI also exhibited the highest population growth rates.

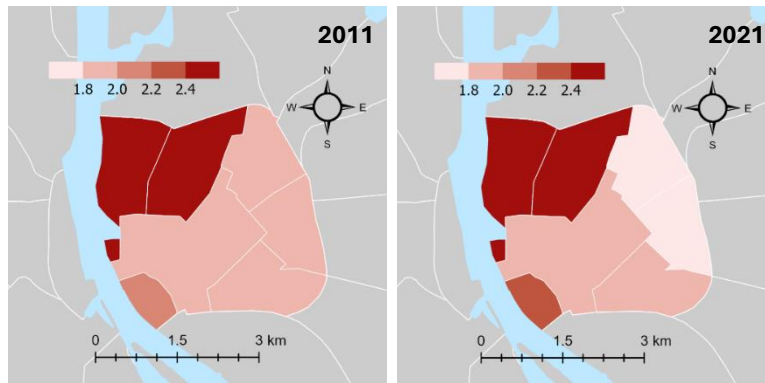


Figure 5. Simpson’s Reciprocal Diversity Index for the inner-city core of Riga in 2011 and 2021
Source: Authors' calculations based on Central Statistical Bureau data (CSB) of Latvia, (2021)

Local residential patterns

Ukrainians constitute the second-largest ethnic minority group in Riga's inner-city core and are notably the only long-established ethnic minority group experiencing growth. Although Ukrainians are generally underrepresented across most of the study area, there are numerous pockets of overrepresentation. In contrast, the rapidly growing emerging ethnic groups of Indians and Uzbeks exhibit more spatial concentration, which is a common characteristic of smaller ethnic groups. Both groups are predominantly concentrated in the Avoti neighbourhood, attributed to factors such as affordable rent, central location, and a gentrified environment. Initially, these concentrations are higher in areas with more attractive rental markets, but over time, a more dispersed settlement pattern is anticipated. Additionally, there is a notable concentration of Indians in the Art Nouveau district and Old Town. It is important to note that emergent communities tend to settle in areas where members of their ethnic community are already present.

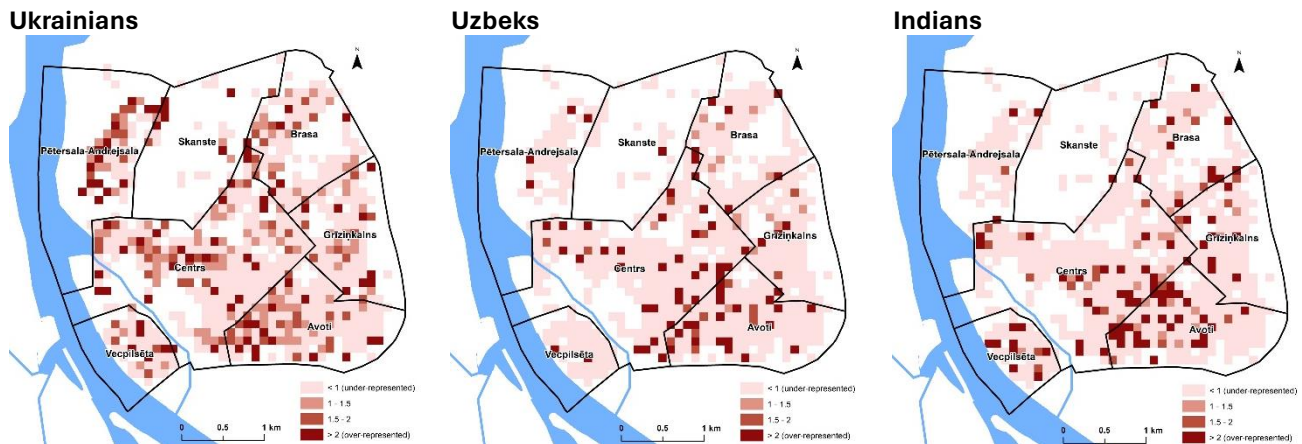


Figure 6. Location Quotient for Indians, Uzbeks, and Ukrainians in the inner-city core of Riga in 2021
Source: Authors' calculations based on Central Statistical Bureau data (CSB) of Latvia, (2021)

References

- Apparicio, P., Martori, J. C., Pearson, A. L., Fournier, É., & Apparicio, D. (2014). An Open-Source Software for Calculating Indices of Urban Residential Segregation. *Social Science Computer Review*, 32(1). <https://doi.org/10.1177/0894439313504539>
- Benassi, F., Naccarato, A., Iglesias-Pascual, R., Salvati, L., & Strozza, S. (2023). Measuring residential segregation in multi-ethnic and unequal European cities. *International Migration*, 61(2). <https://doi.org/10.1111/imig.13018>
- Bolt, G., & van Kempen, R. (2010). Ethnic segregation and residential mobility: Relocations of minority ethnic groups in the Netherlands. *Journal of Ethnic and Migration Studies*, 36(2). <https://doi.org/10.1080/13691830903387451>
- Boterman, W. R., Musterd, S., & Manting, D. (2021). Multiple dimensions of residential segregation. The case of the metropolitan area of Amsterdam. *Urban Geography*, 42(4). <https://doi.org/10.1080/02723638.2020.1724439>
- Catney, G., Lloyd, C. D., Ellis, M., Wright, R., Finney, N., Jivraj, S., & Manley, D. (2023). Ethnic diversification and neighbourhood mixing: A rapid response analysis of the 2021 Census of England and Wales. *Geographical Journal*, 189(1). <https://doi.org/10.1111/geoj.12507>
- Catney, G., Wright, R., & Ellis, M. (2021). The evolution and stability of multi-ethnic residential neighbourhoods in England. *Transactions of the Institute of British Geographers*, 46(2). <https://doi.org/10.1111/tran.12416>
- Central Statistical Bureau of Latvia. (2021). Population and its characteristics. Official Statistics Portal. https://data.stat.gov.lv/pxweb/en/OSP_PUB/START__POP__IR/
- Hårsmann, B. (2006). Ethnic diversity and spatial segregation in the Stockholm region. *Urban Studies*, 43(8). <https://doi.org/10.1080/00420980600776434>
- Järv, O., Masso, A., Silm, S., & Ahas, R. (2021). The Link Between Ethnic Segregation and Socio-Economic Status: An Activity Space Approach. *Tijdschrift Voor Economische En Sociale Geografie*, 112(3). <https://doi.org/10.1111/tesg.12465>
- Krišjāne, Z., & Bērziņš, M. (2014). Intra-urban residential differentiation in the post-Soviet city: The case of Riga, Latvia. *Hungarian Geographical Bulletin*, 63(3). <https://doi.org/10.15201/hungeobull.63.3.1>
- Rutland, P. (2023). Thirty Years of Nation-Building in the Post-Soviet States. In *Nationalities Papers* (Vol. 51, Issue 1). <https://doi.org/10.1017/nps.2021.94>
- Simpson, L. (2007). Ghettos of the mind: the empirical behaviour of indices of segregation and diversity. *Journal of the Royal Statistical Society Series A: Statistics in Society*, 170(2), 405-424.
- Steele, L. G., & Abdelaaty, L. (2019). Ethnic diversity and attitudes towards refugees. *Journal of Ethnic and Migration Studies*, 45(11). <https://doi.org/10.1080/1369183X.2018.1513785>
- Tindale, A., & Klocker, N. (2021). Neighborhood ethnic diversity and residential choice: how do mixed-ethnicity couples decide where to live? *Urban Geography*, 42(6). <https://doi.org/10.1080/02723638.2020.1738659>
- van Ham, M., & Tammaru, T. (2016). New perspectives on ethnic segregation over time and space. A domains approach. *Urban Geography*, 37(7). <https://doi.org/10.1080/02723638.2016.1142152>