

Geography of migration motives: Matching migration motives with socioeconomic data

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Abstract

Motives behind internal migration reported by internal migrants often differ from those assumed by standard economic and social theories. This research aims to narrow the gap between the stated motives and those suggested by human capital models. It relates the net migration rates by specific motives to socioeconomic and sociodemographic variables at the LAU 1 level in the period 1997–2021 in Slovakia. This research establishes that most of the stated motives behind internal migration (housing and family) differ from those assumed by human capital theories. This finding is valid for motives stated at the proximal level. The analysis of migration rates and housing supply indicates a substantial concentration of interdistrict migrants in suburban districts of affluent metropolitan regions. This finding resonates with assumptions on the latent importance of employment and income for internal migration.

Keywords: internal migration, migration motives, metropolitan reason, suburbanisation

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1. Introduction

Standard economic and social theories (Sjaastad, 1962; Harris & Todaro, 1970; Mincer, 1978; Stark & Bloom, 1985, Kennan & Walker, 2011) assume that internal migration is driven by job and income disparities between places of origin and destination. This has been empirically tested in several developed and developing countries (e.g. Borjas et al., 1992; Cebula, 2005; Phan & Coxhead, 2010). However, the migration motives that people cite when asked about their migration often differ from those suggested by social and economic theories (Morrison & Clark, 2011, 1948–1949). Employment and income-related reasons tend to motivate only a minority of the total moves in developed countries. This paper aims to close the gap between stated and actual migration motives. The research adopts a long-term perspective and relates the net migration rates to socioeconomic and sociodemographic variables at the LAU 1 level from 1997–2021 in Slovakia.

There is relatively rich research on internal migration and suburbanisation trends in post-socialist countries (Bezák, 2008; Lerch, 2014; Šveda et al., 2016; Spórna & Krzysztofik, 2020). Research on internal migration in Slovakia has explored unemployment and wage differentials (Janotka & Gazda, 2010; Michálek & Podolák, 2011; Ondoš and Káčerová, 2015) and regional clusters (Janotka et al., 2013). Relatively few studies have targeted the quantitative assessment of migration motives over the long term (but see Morrison & Clark, 2011; Thomas, 2019; Halás & Klapka, 2021). Most studies on internal migration adopt a cost-benefit framework and leave the gap between self-reported motives and actual socioeconomic and sociodemographic developments

unanswered. Research on the motives behind internal migration in countries of Central and Eastern Europe (CEE) is rather scarce, and our analysis attempts to fill this gap. To our knowledge, no study has compared self-reported motives with actual data.

2. Theoretical background

This chapter discusses two major theoretical approaches to internal migration, human capital and life course transition frameworks, and then it turns to the latent economics of migration motives. The research gap is identified, and hypotheses are formulated.

2.1 Human capital framework

Sjaastad's (1962) seminal paper on internal migration adopted the perspective of human capital and considered internal migrants to be utility maximisers. Human capital models of internal migration are based on arbitrage decisions between labour markets. An internal migrant moves if the net discounted expected returns on his or her human capital accumulated in the place of destination surpass those in the place of origin. While Sjaastad (1962, 65) also acknowledged the 'psychic' (nonmonetary) costs of migration (related to leaving family and familiar surroundings), most attention in migration research was given to the elicitation of monetary costs and benefits (Harris & Todaro, 1970). The 'new economics of labour migration' (Mincer, 1978; Stark & Bloom, 1985) later argued that migration decisions are often made at the family level rather than the individual level and extended assumptions on cost-benefit maximisation to the family

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level. Spatial differences in wages, employment and unemployment remained central in the literature on the economics of internal migration in developing and developed countries (Lucas, 1997, 735; Kennan & Walker, 2011, 246; Jia et al., 2023, 17).

While the human capital model is a powerful analytical tool for studies on labour economics, it 'does not provide a comparably powerful explanation of migration' (Greenwood, 1997, 647). In developed countries, reported motives mostly revolve around housing (i.e. housing availability, cost and quality), family and social affairs, and health and study reasons, while economic motives seem to be of lesser importance (Lundholm et al., 2004, 65; Clark & Huang, 2004, 625; Nedomysl & Amcoff, 2011, 662; Morrison & Clark, 2011, 1955; Clark & Mass, 2015, 59). There are several explanations for this apparent contradiction.

The first explanation refers to Sjaastad's nonmonetary costs and returns on internal migration. Returns on internal migration go beyond those related to income. For example, there is some evidence that residential relocation has a strong and enduring positive effect on housing satisfaction in comparison to overall life satisfaction (Nowok & McCollum, 2018).

2.2 Life course transition framework

The second explanation points to different migration motives over a life course. The life course framework has gained importance since the 1990s. The framework has benefited from better availability of longitudinal data (Vidal & Huinink, 2019, 596). The 'sociology of internal migration' explores relations between place, family ties and mobility over the life trajectory. The life course transition employs individual biographies to link spatial trajectories to major demographic events, such as birth, study, work, union formation/dissolution and retirement (Bailey, 2009, 408). An individual considers subjective opportunity differentials between the current and alternative places of living. The decisions to migrate are also informed by the influences of 'significant others' and available resources for migration (Kley, 2010, 469).

Migration is highly age-selective. Age-dependent migration patterns are connected to specific life transitions such as study, job search/change, marriage, and/or childbirth. The highest migration propensities are typical for young adults. These propensities decline rapidly in the later stages of life. If the first migration move is completed in later adulthood, the chances of repeated migration are significantly reduced (Bernard, 2017). Migration motives may change over time and follow important life course transitions. While obtaining education, employment, and independent housing is very important for young and educated adults (Thomas, 2019, 9), living with family and friends gains importance in the later stages of life (Coulter & Scott, 2015, 367). Internal moves, of course, can be informed by multiple considerations, of which family emerges as important (in either the first or second place) (Gillespie et al., 2021). Causal relations between marriage, births, divorce and internal migration are subject to debate (Cooke, 2008, 260), but family events tend to be critical predictors of migration rather than vice versa (Vidal & Huinink, 2019, 596). There is some evidence on the timing of marriage and the purchase of jointly owned housing (Holland, 2012). Birth of a child increases demand for better housing, but people with somewhat older children are less likely to move, especially over longer distances (Dommermuth & Klüsener, 2019, 14). The first move tends to have a low impact on divorce, but repeated migrations, especially over long distances, are stressful, disrupt social networks and increase the risk of divorce (Boyle et al., 2008, 218).

The human capital approach states economic motives for internal migration in simple terms of employment and income. The life course framework acknowledges economic motives in a subtler manner. It accentuates the importance of age, space,

family and social networks in mobility decisions. Economic motives dominate in long-distance migration, while noneconomic motives (habitation, environment, family) prevail in short-distance moves (Biagi et al., 2011, 123; Halás & Klapka, 2021, 7). Long-distance migrants may achieve career advancement and higher income but lose support from local social networks and incur 'psychic' (nonmonetary) costs of migration (Sjaastad, 1962). Stayers are more likely to benefit from material and emotional support by family and friends. Housing decisions are informed by upward moves on the housing ladder but also by cost considerations (Vidal & Huinink, 2019, 597). Young families move from metropolitan to suburban areas to look for a desirable lifestyle and cheaper and larger housing (Sandow & Lundholm, 2020, 286).

The life course framework acknowledges changing family dynamics in internal migration. An increase in the share of single-person households, a decrease in fertility (Šprocha et al., 2022), and more complex and more fluid household structures, for example, enhance short-distance and circular migration (Green, 2018). Changes in age composition, regional inequalities (Alvarez et al., 2021, 14), the structure of labour markets, and behavioural change (e.g. increased place attachment), for example, rank as the most important factors behind a decline in the intensity of internal migration in developed countries (Kalembe et al., 2022, 303).

2.3 Latent economics of migration motives

The third explanation distinguishes between stated (proximal) and latent migration motives. The discrepancy between self-reported motives and those assumed by social and economic theories does not mean that job and income motives are irrelevant for internal migration. The working-age population accounts for the vast majority of moves. It is problematic to move to any destination if there is no source of income. Acceptable employment or income is a necessary enabling condition for any move and must be addressed beforehand. Migrants may report other proximate reasons for their moves (such as housing or family), but new or continuing employment (income) is a latent variable behind a substantial portion of internal migration. Morrison and Clark (2011) suggested that there is a difference between employment as an enhancing versus enabling factor of internal migration. Enhancing motives refer to a desire to increase net income from employment, while enabling motives refer to the aim to secure acceptable income. In fact, employment and income motives account for only a fraction of moves by the working-age population, including those in countries with substantial regional disparities. There is indeed some evidence that only a minority of migrants (i.e. those with higher education) are able to capture large monetary returns from internal migration, while the majority of migrants end up with low or negative gains (Morrison & Clark, 2011, 1956; Korpi & Clark, 2015, 34). Job-related moves need not necessarily aim at increases in net income. Motivations behind a job change may include higher job satisfaction and/or improved working conditions and environments. The three explanations are complementary, rather than exclusive.

2.4 Research hypotheses

The theoretical framework and literature review suggested the following hypotheses:

- Hypothesis 1: Stated migration motives correlate well with actual socioeconomic and sociodemographic developments.
- Hypothesis 2: The availability of jobs is a latent variable behind most migration moves.

3. Data and methods

Most data on migration motives in developed countries come from panels (Coulter & Scott, 2015; Thomas et al., 2019) and/or ad hoc surveys (Morrison & Clark, 2011; Nedomysl & Amcoff, 2011;

Dommermuth & Klüsener, 2019; Gillespie et al., 2021). Panel- and survey-based studies may design and test their own hypotheses. The surveys may be more or less representative of the total population and diverse time periods.

Data on internal moves come from population registers in Slovakia. Each person changing his or her permanent residence completes a short questionnaire with a local authority in the migration destination. Internal migrants can choose from the following nine reasons for moving to and from a specific district: (1) job change, (2) job proximity, (3) study, (4) health, (5) marriage, (6) divorce, (7) housing, (8) following family/relatives, and (9) other reasons. The person indicates only one key reason for the move. Open text is not allowed. The system of migration records established in the communist period has changed little until the present. The current Slovak Law on Populations Registry (No. 253/1998) transposed provisions of the 135/1982 Law on Registries. The provisions set that the head of household can register all other household members. The motive ‘following family/relatives’ is recorded automatically for all children up to age 15.

The Statistical Office of the Slovak Republic (SOSR, 2023) processes administrative records and publishes annual datasets on internal migration. The complete data matrix accounts for a zero balance — the total number of internal emigrants equals the total number of immigrants. The database contains records on all 2,648,132 (intra- and interdistrict) changes in permanent residence in the period 1992–2021 in Slovakia. This research covers all 1,110,417 between-district changes in permanent residence in the period 1997–2021. Complete and long-term records are the obvious advantage of the dataset. The SOSR, unfortunately, does not allow access to microdata on internal migrants. The major drawback of the administrative data is that the moves are recorded only after the permanent residence is changed. The actual move may have been completed before, e.g. after the certain period of studying and/or living in the destination region (see Halás & Klapka, 2021, 4 for more details).

The research examines interdistrict migration to associate the effects of migration with trends in regional polarisation. The net migration rate (per 1,000 population) at the district level is the dependent variable in this research.

A new territorial structure was established in Slovakia in 1996. The country was divided into eight NUTS 3-level regions and 79 LAU 1 (NUTS 4) districts. An analysis of internal migration is performed at the district (LAU 1) level, as this is the most detailed spatial level at which relevant socioeconomic and sociodemographic data are available. The 1997 district-level data have already been used in migration studies in Slovakia (Janotka & Gazda, 2010; Janotka et al., 2013; Michálek & Podolák, 2011; Ondoš & Káčerová, 2015).

To verify the robustness of the results, internal migration flows are specified for two types of spatial structures. The first structure considers all 79 administrative districts. The second structure follows the methodology of the OECD (2012, 23) and Ženka et al. (2021, 6) and comprises 70 territorial units. It aggregates five Bratislava City districts and four Košice City districts into the

respective metropolitan core districts. The districts surrounding Bratislava city (i.e. Pezinok, Malacky and Senec) and the Košice-okolie district are considered hinterlands of metropolitan areas. All other districts are considered nonmetropolitan areas.

This research analyses migration motives recorded in population registers. The motives refer to specific life course transitions, such as employment, marital status, housing, and family formation/dissolution (Cooke, 2008; Bailey, 2009; Vidal & Huinink, 2019). The motives are approximated by respective socioeconomic and sociodemographic variables, such as unemployment rates, the construction of new flats, and marriage, divorce and birth rates.

Slovakia accounts for vast west–east disparities in terms of employment, income, infrastructure endowments, and the quality of public services (Halás, 2014). These disparities are approximated via the distance of individual districts from the capital city of Bratislava. The important role of the capital city in internal migration processes was also identified in the works of Dennett and Wilson (2013) and Rowe and Patias (2020). Study and health motives could be quite heterogeneous for specific individuals and regions. These two motives also proved to be marginal for the total net migration rate. We use the urbanisation rate as a crude proxy for study motives, as higher education institutions tend to concentrate in urban areas. No proxy was used for the ‘other’ migration motive.

The road distance¹ from district capitals to Bratislava is a proxy for the distance variable. The data for independent variables come from the SOSR (2023) ‘Demography and Social Statistics’ and are available from the online DataCube database. All demographic variables are computed for the mid-year population. The data on new flats refer to all types of housing (after final building approval)². Unemployment is a key determinant of internal migration in Harris and Todaro’s (1970) seminal paper. There is some evidence on the importance of the unemployment rate for internal migration in Slovakia (Gazda & Novotný, 2014, 6). Unemployment rates in the district accounted for much higher disparities than wages. The variation coefficient for unemployment rates, for example, was 47.43% for unemployment rates but 19.72% for wages in 1997–2008³.

Data were provided for the period 1997–2021. This long period of 25 years accounted for some important changes in the Slovak economy, as well as societal and demographic developments. As shown in the next chapter, these changes also impacted patterns of internal migration. We therefore divide the period 1997–2021 into two subperiods: 1997–2008 and 2009–2021. The first subperiod presented profound structural and socioeconomic changes, such as market reforms, the integration of Slovakia into the European Union and global trade networks, a high influx of foreign direct investment, and high rates of economic growth but also high unemployment rates. The period ended with the abrupt onset of a global financial and economic crisis in 2008. The second period presented postcrisis adjustments and lower rates of economic growth but also generally lower unemployment rates.

Correlation, factor and regression analyses were employed to examine the relationships between self-reported migration motives and actual changes in the net migration rates.

¹ Bačík, V. (2023): available at: www.sodbtn.sk/obce

² Many internal moves are informed by housing prices. Housing price statistics, unfortunately, are available only from 2007 on the NUTS 3 level in Slovakia.

³ We considered some alternative variables for drivers of internal migration, such as job vacancies and wages. The Pearson correlation coefficients were –0.107 and 0.112 (both insignificant) for 1997–2008 and 2009–2021, respectively. Data on job vacancies are rather less reliable than those on unemployment. Not all employers provide accurate data on vacancies. Income disparities are underreported as well. Some sectors (construction, gastronomy) typically have low/minimum wages, but many workers collect undeclared cash payments. Data on unemployment are more representative than data on vacancies and wages. Unemployed individuals are motivated to register with the local labour office and collect unemployment and social benefits.

First, we examine correlations between individual (stated) migration motives to determine to what degree these motives are distinctive or interchangeable. In the second step, the net migration rates are correlated with specific socioeconomic variables. To address substantial multicollinearity, the socioeconomic variables are merged into a lower number of meaningful factors (Joliffe & Morgan, 1992) and then examined via regression analysis in the third step of analysis.

4. Results

4.1 Descriptive analysis

Figures 1 and 2 present some important trends in internal migration in Slovakia in the period 1997–2021. Several findings stand out.

Internal migration intensity and structure (inter- versus intra-district) were generally stable over the whole period (see Fig. 1). The intensities of intra- and inter-district migration comoved and reacted in response to the same types of events. There were some notable but temporary declines in migration intensities: economic downturns in 1999–2001 and 2009 and the 2020 wave of the COVID-19 pandemic. Furthermore, there was an increase in migration associated with periods of economic booms (2002–2008, 2014–2019).

While the overall intensity of migration changed little, there were substantial changes in the composition of migration motives:

- Housing and family-related motives were by far the most important out of the total set of motives. These respective motives were reported by 32.4% and 27.4% of internal immigrants in 1997–2008 and 31.8% and 25.6% in 2009–2021. This finding is consistent with the high shares of housing and family-related motives reported by internal migrants in developed countries (Coulter & Scott, 2015; Nowok, 2018). The ‘other’ migration motives significantly increased in importance. They accounted for 19.0% of the total motives in 1997–2008 but 24.4% in 2009–2021.
- Migrants aged 20–64 years accounted for 68.4% and 69.9% of the total interdistrict migrants in the periods 1997–2008 and 2009–2021, respectively. Job change and job proximity, however, accounted for a low and declining weight in the overall structure of migration motives (see Fig. 2). This finding is consistent with findings from other OECD countries (Morrisson & Clark, 2011). We assume that the low weight of job-related motives is obscured by the difference between

the enabling and enhancing roles of employment and income in total migration flows. The declining shares of job-related motives may also refer to the increasing age of internal migrants. The average age of internal migrants increased by approximately three years in the period 1997–2021. Some important life course transitions (including job change) are related to young age. With increasing age, the probability of job-motivated migration decreases. Profound changes in the Slovak labour market may also have impacted job-related migration. Unemployment rates peaked in 1999–2002 in Slovakia. Later years (including the postcrisis period) presented much lower unemployment rates. Job and income considerations therefore were of lower importance for internal migrants in the 2020s than in the 1990s.

- Marriage and divorce motives were frequently mentioned in the 1990s but decreased in importance over time. Health and study motives were rarely reported over the whole period.

Correlation, factor and regression analyses were performed for two spatial structures (see Appendixes 1 and 2). We first present findings related to the structure with 79 districts in sections 4.2, 4.3 and 4.4. Section 4.5 discusses findings for the structure with 70 spatial units.

4.2 Correlation analysis

We perform two types of correlation analysis. The first analysis examines how much specific migration motives are similar (and potentially interchangeable) or disparate. The second analysis explores simple correlations between, on the one hand, reported

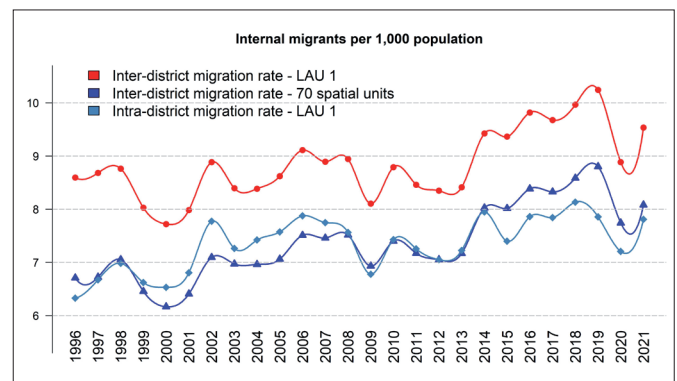


Fig. 1: Intensity of internal migration in Slovakia in 1997–2021
Source: authors, based on SOSR (2023) data

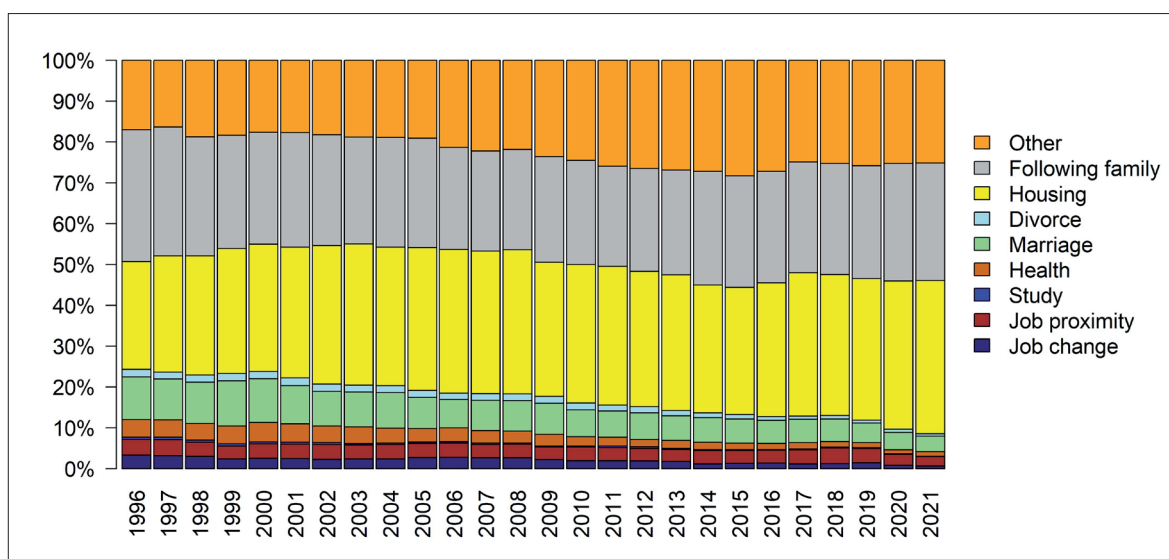


Fig. 2: Stated motives for internal migration in Slovakia in 1997–2021 in 79 districts
Source: authors, based on SOSR (2023) data

migration motives and, on the other hand, actual data on socioeconomic and sociodemographic developments. This analysis helps identify common underlying factors behind migration developments. Furthermore, it points to the complex nature of relations between individual socioeconomic and sociodemographic variables as well as risks (and ways of mitigation) by multicollinearity.

4.2.1 Correlations by reported migration motives

Some reported motives were highly correlated (Tab. 1). Job change, job proximity, and marriage-driven moves, for example, generated correlation coefficients in the range of 0.7–0.9 from 1997–2008 and 2009–2021. A suggested explanation is that if the members of a couple came from different regions, one member tended to move to (and find a job in) the region of his or her spouse. Housing and family motives were also highly correlated (Pearson correlation above 0.84 in both subperiods). The finding is rather unsurprising, as the motive to ‘following family/relatives’ is automatically recorded for children up to the age of 15. Accompanying children accounted for 20.4% of total internal migrants in 1997–2008 and 21.1% in 2009–2021.

The correlations between, on the one hand, job change and job proximity and, on the other hand, housing and family motives were medium-low and negative in 1997–2008 but positive and medium-high in 2009–2021. A potential explanation points to the changing geography of migration motives between the two time periods. Positive net migration rates for job-related motives were typical for metropolitan core and metropolitan-hinterland districts (as well as for county capitals) in both time periods. The metropolitan core areas entailed expensive housing and, in some cases, negative migration rates related to housing and family motives. Approximately half of the Slovak districts showed positive net migration rates for housing and family-related motives in 1997–2008, but quite a few did so in 2009–2021. Housing and family-related net migration rates were mostly found in the hinterlands of metropolitan core areas. This finding is supported by the results of the regression analysis. It gives some support to the assumption of theories on life course transition (Vidal & Huinink, 2019; Holland, 2012) but needs further verification.

Study-related motives were highly correlated with job proximity from 1997–2008 but not from 2009–2021. The finding may be related to the high shares of tertiary-educated people in the total population

and the availability of higher education institutions across Slovak regions in the period 2009–2021. Assumptions on the study-related motives must be observed with caution, as their share in total stated motives was quite low (Fig. 2). Moves related to health and ‘other’ reasons seemed to be quite diverse, as they generated dissimilar and mostly medium-low correlation coefficients in both subperiods. We found no unambiguous proxy for this migration motive.

4.2.2 Correlation by socioeconomic and sociodemographic variables and net migration rates

The second correlation analysis suggested that some migration motives were well correlated with actual data on socioeconomic and sociodemographic variables. Housing availability (approximated via the number of new flats per 1,000 population) accounted for the highest correlation with the total net migration rate. Housing availability was contingent on the unemployment rate and the distance of a district from Bratislava. The correlations pointed to vast regional disparities between developed western (particularly Bratislava) and poor eastern parts of Slovakia.

The marriage rate was correlated with (live) births but not with the unemployment rate. This is interesting, as job- and marriage-related motives proved to be highly correlated. The live birth rate (Dommermuth & Klüsener, 2019) accounted for different developments in the periods 1997–2008 and 2009–2021. In the former period, high birth rates were associated with poor regions in the eastern part of Slovakia with high unemployment rates. The association no longer held in the later period. Increased birth rates were also found in rural hinterlands of the cities of Bratislava and Košice. This development is explained via substantial immigration by young families to the suburban districts of Senec (SC), Pezinok (PK), Malacky (MA), and Košice-okolie (KS). Birth rates and marriage rates weakly correlated with the net migration rate. We assume that marriage and live births impacted net migration rates indirectly via an increased demand for new housing (Holland, 2012; Dommermuth & Klüsener, 2019).

Interestingly, the correlation between the divorce rate and the net migration rate was low and insignificant from 1997–2008 but proved to be positive, medium-sized and highly significant from 2009–2021. Correlation is not causation. Boyle et al. (2008) suggested that long-distance migration increases the probability of divorce, but we cannot tell whether the increased numbers of divorces transferred into higher migration rates or vice versa.

	Job change	Job proximity	Study	Health	Marriage	Divorce	Housing	Following family	Other
1997–2008									
Job change	1								
Job proximity	0.926**	1							
Study	0.822**	0.848**	1						
Health	–0.111	–0.183	–0.233*	1					
Marriage	0.712**	0.821**	0.700**	–0.242*	1				
Divorce	–0.140	–0.077	0.054	–0.113	0.295**	1			
Housing	–0.261*	–0.268*	–0.417**	0.174	–0.023	0.304**	1		
Following family	–0.374**	–0.418**	–0.492**	0.119	–0.135	0.224*	0.840**	1	
Other	–0.105	–0.072	–0.146	–0.143	0.283*	0.553**	0.601**	0.492**	1
2009–2021									
Job change	1								
Job proximity	0.846**	1							
Study	0.365**	0.360**	1						
Health	0.436**	0.301**	0.135	1					
Marriage	0.802**	0.901**	0.370**	0.337**	1				
Divorce	0.679**	0.514**	0.100	0.351**	0.520**	1			
Housing	0.670**	0.440**	0.316**	0.432**	0.436**	0.315**	1		
Following family	0.491**	0.291**	0.285*	0.289**	0.257*	0.130	0.847**	1	
Other	0.278*	0.389**	0.450**	0.017	0.288*	–0.164	0.040	0.301**	1

Tab. 1: Correlation matrix for migration motives

Source: authors' computations based on SOSR (2023) data. Notes: **significant at the 0.01 level; *significant at the 0.05 level. Correlations above 0.5 are in bold

4.3 Factor analysis

Multicollinearity is a common problem in social and economic research. The correlation matrix (Tab. 2), for example, indicates high correlations between, on the one hand, a district's distance from Bratislava and, on the other hand, the unemployment rate, divorce rate, and housing construction. We found several independent variables with correlation coefficients higher than 0.6 (and significant at the 0.01 level). Factor analysis alleviates issues surrounding multicollinearity. Factor analysis helps by reducing a high number of independent variables to a lower number of factors. The factor analysis reduced the aforementioned seven independent variables to three factors (Tab. 3).

Three factors were established for the period 1997–2008. Factor 1 ('metropolitan region') included variables on the distance from Bratislava, unemployment rates, and new flats. Factor 2 ('young families') included marriage and live birth rates. Factor 3 ('urban region') included the urban population rate and divorce

rate. Similar factors were also established for the period 2009–2021. These factors had a quite similar composition in the period, except that the variable on the divorce rate transferred to Factor 1. All three factors had high factor loadings (Tab. 3). Moreover, the three factors explained 86.18% of the total variance in the period 1997–2008 and 85.38% in the period 2009–2021.

4.4 Regression analysis

The factor scores for Factors 1, 2 and 3 were the explanatory variables in the ordinary least squares regression model to explain the variability in the net migration rates (Tab. 4).

All three factors proved to be highly significant:

- Factor 1 had a negative sign from 1997–2008 but a positive sign from 2009–2021. The change refers to a reversal in the migration rate in the city of Bratislava between the two periods and a substantial decrease in unemployment rates in regions away from the capital region.

	Net migration rate	Distance to Bratislava (km)	Urban population (%)	Unemployment rate (%)	Marriage rate	Divorce rate	Live birth rate	New flats
1997–2008								
Net migration rate	1							
Distance to Bratislava (km)	-0.380**	1						
Urban population (%)	-0.336**	-0.209	1					
Unemployment rate (%)	-0.163	0.654**	-0.518**	1				
Marriage rate	-0.244*	0.232*	0.167	-0.181	1			
Divorce rate	0.097	-0.538**	0.605**	-0.340**	-0.368**	1		
Live birth rate	-0.104	0.617**	-0.417**	0.511**	0.507**	-0.679**	1	
New flats	0.640**	-0.514**	0.131	-0.604**	0.224*	0.120	-0.133	1
2009–2021								
Net migration rate	1							
Distance to Bratislava (km)	-0.452**	1						
Urban population (%)	-0.034	-0.209	1					
Unemployment rate (%)	-0.324**	0.683**	-0.462**	1				
Marriage rate	0.081	0.036	0.270*	-0.228*	1			
Divorce rate	0.459**	-0.717**	0.455**	-0.552**	-0.293**	1		
Live birth rate	0.226*	0.182	-0.130	0.211	0.609**	-0.401**	1	
New flats	0.896**	-0.574**	0.112	-0.549**	0.304**	0.492**	0.284*	1

Tab. 2: Correlation matrix for migration motives and socioeconomic variables

Source: authors' computations based on SOSR (2023) data

Notes: marriage rate, divorce rate, live birth rate, and new flats are stated per 1,000 population. Share of population in municipalities with 5,000+ population was proxy for urbanisation rates; ** significant at the 0.01 level; * significant at the 0.05 level. Correlations above 0.5 are in bold.

1997–2008			
Component (% of the total variance)	1 (31.30%)	2 (28.18%)	3 (26.70%)
New flats per 1,000 population	-0.897	0.137	-0.028
Unemployment rate (%)	0.800	0.005	-0.455
Distance to Bratislava	0.759	0.496	-0.166
Marriage rate per 1,000 population	-0.181	0.922	0.146
Live birth rate per 1,000 population	0.312	0.725	-0.466
Urban population (%)	-0.121	0.065	0.962
Divorce rate per 1,000 population	-0.158	-0.572	0.684
2009–2021			
Component (% of the total variance)	1 (38.10%)	2 (27.46%)	3 (19.82%)
Distance to Bratislava	-0.895	0.141	-0.087
New flats per 1,000 population	0.844	0.388	-0.073
Divorce rate per 1,000 population	0.763	-0.423	0.294
Unemployment rate (%)	-0.736	-0.025	-0.477
Live birth rate per 1,000 population	-0.059	0.889	-0.231
Marriage rate per 1,000 population	0.021	0.884	0.340
Urban population (%)	0.159	0.017	0.944

Tab. 3: Rotated Component Matrix

Source: authors' computations based on the SOSR (2023) data

Notes: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalisation

	Unstandardised coefficients		Standardised coefficients	t	Sig.
	B	Std. error	Beta		
<i>1997–2008; adjusted R-squared = 0.515; F = 28.636, sig. 0.000</i>					
(Constant)	-0.175	0.226		-0.776	0.440
F1 (flats, distance, unemployment)	-1.583	0.227	-0.549	-6.962	0.000
F2 (marriage, live births)	-0.750	0.227	-0.260	-3.298	0.001
F3 (urban population, divorce)	-1.172	0.227	-0.406	-5.154	0.000
<i>2009–2021; adjusted R-squared = 0.640; F = 47.177, sig. 0.000</i>					
(Constant)	-0.478	0.317		-1.506	0.136
F1 (flats, distance, unemployment, divorce)	3.442	0.319	0.732	10.776	0.000
F2 (marriage, live births)	1.119	0.319	0.238	3.505	0.001
F3 (urban population)	-1.157	0.319	-0.246	-3.623	0.001

Tab. 4: OLS regression (variables significant at the 0.001 level are in bold)
Source: authors' computations based on SOSR data

- Factor 2 showed a negative sign from 1997–2008 but a positive sign from 2009–2021. The change reflects an increase in marriage and birth rates in the cities of Bratislava and Košice as well as a transition from a negative to a positive migration rate in the city of Bratislava from 2009–2021 in comparison to 1997–2008.
- Factor 3 had a negative sign in both subperiods. The negative sign is explained by very high and positive migration rates in five suburban districts of the cities of Bratislava and Košice (Senec, Pezinok, Malacky, Dunajská Streda, and Košice-okolie)⁴.

High values of R-squared indicate a good match between the net migration rates (coming from self-reported motives) and explanatory socioeconomic and sociodemographic factors (supporting Hypothesis 1).

High values of the standardised beta coefficients for Factor 1 ('metropolitan region'; -0.549 and 0.732 for 1997–2008 and 2009–2021) indicate that this factor was by far more important for the total migration rate than were Factors 2 and 3. The OLS regression tells the story of extreme regional polarisation and massive suburbanisation in the capital city of Bratislava and (to a much lower degree) in the city of Košice. Figure 3 (upper panel) displays net migration rates for 79 Slovak districts. Positive rates are depicted in blue, while negative rates are displayed in red. There was an apparent trend in the concentration of positive migration rates around suburbs of the cities of Bratislava and Košice, and the polarisation became more extreme over time. Some 37 districts (out of 79 in total) accounted for a positive migration rate from 1997–2008, but only 21 did in the period 2009–2021. Moreover, the five suburban districts comprised 54.9% and 63.4%

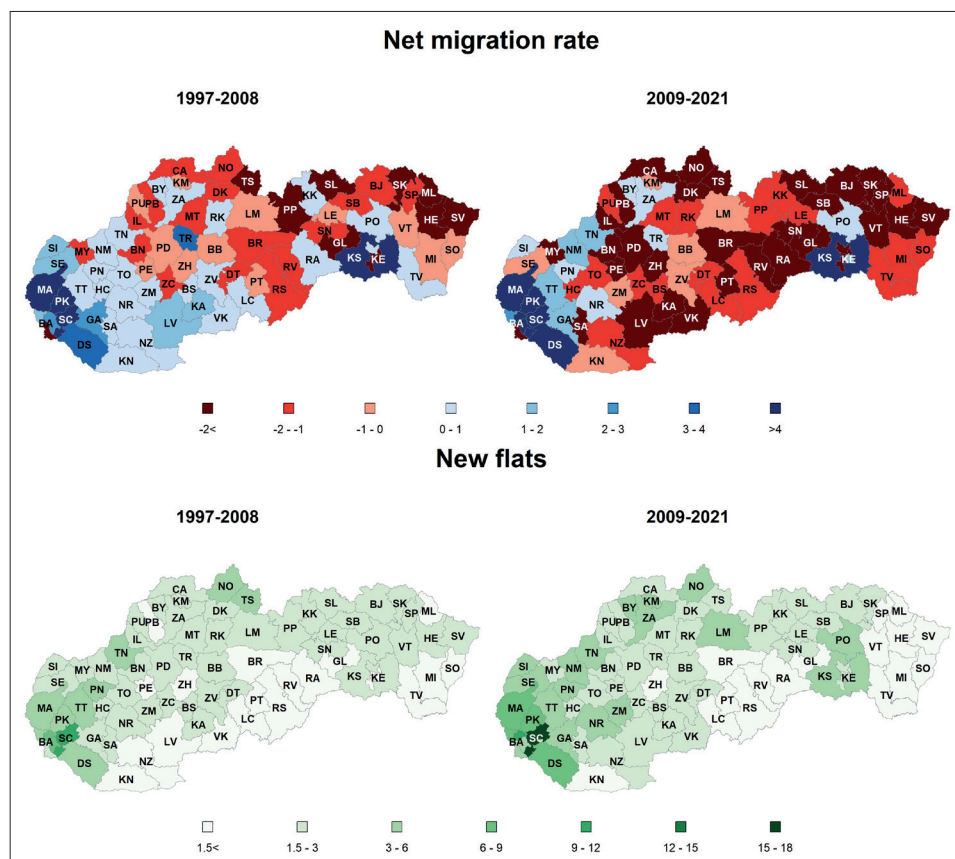


Fig. 3: Net rates of internal migration and new flats (per 1,000 population) in Slovakia in 1997–2021. Source: authors

⁴ A complete list of Slovak districts, their official codes, and information on area and population can be found here: <http://www.statoids.com/ysk.html>

of all migration gains in 1997–2008 and 2009–2021, respectively. The respective shares of total new flats represented by the five suburban districts were 14.5% and 21.3% (Fig. 3, bottom panel). While the capital region of Bratislava and its suburban districts enjoyed an influx of migrants, the rest of the country accounted for significant population outflows (with the notable exception of the suburban Košice-okolie district). Patterns of explosive growth in uncontrolled suburbanisation are typical for many post-socialist countries (Sýkora & Stanilov, 2014).

Job-related motives accounted for a minority of the stated total migration moves, but districts with positive net migration rates largely overlapped with those typically presenting below-average unemployment rates. The poorest Slovak regions, on the other hand, had high negative migration rates. The finding gives some credit to Hypothesis 2. This finding is also in agreement with that of Morrisson and Clark (2011). There is a difference between the enabling and enhancing roles of employment in internal migration. People aged below 44 accounted for 82.1% of the total internal migrants from 1997–2021 in Slovakia. We argue that continuing employment was an enabler and latent factor behind

most migration moves. Negative migration rates, for example, were found for the city of Bratislava from 1997–2008 and for the city of Košice from both 1997–2008 and 2009–2021. A negative rate did not mean that inhabitants were leaving their jobs in these cities. The migrants simply looked for cheaper and better-quality housing. This assumption is supported by developments in migration rates to/from Bratislava city districts. Major migration losses were related to the Bratislava 5 (Petržalka) district, while the highest gains were related to the Bratislava 3 (Ružinov) district in both subperiods. Population flight to suburban areas as well as differences in the migration rates among Bratislava city districts indicate that the moves were motivated by improvements in housing consumption. The housing consumption motive, of course, was enabled by the availability of jobs and income in metropolitan areas. This finding is consistent with those from other post-socialist countries (see, for example, Krisjane & Berzins, 2012, 302; Spórna & Krzysztofik, 2020, 12; Šveda et al., 2016) and resonates with assumptions of the life course transition framework.

Job and marriage-related motives clearly dominated in the metropolitan areas of Bratislava and Košice, particularly in

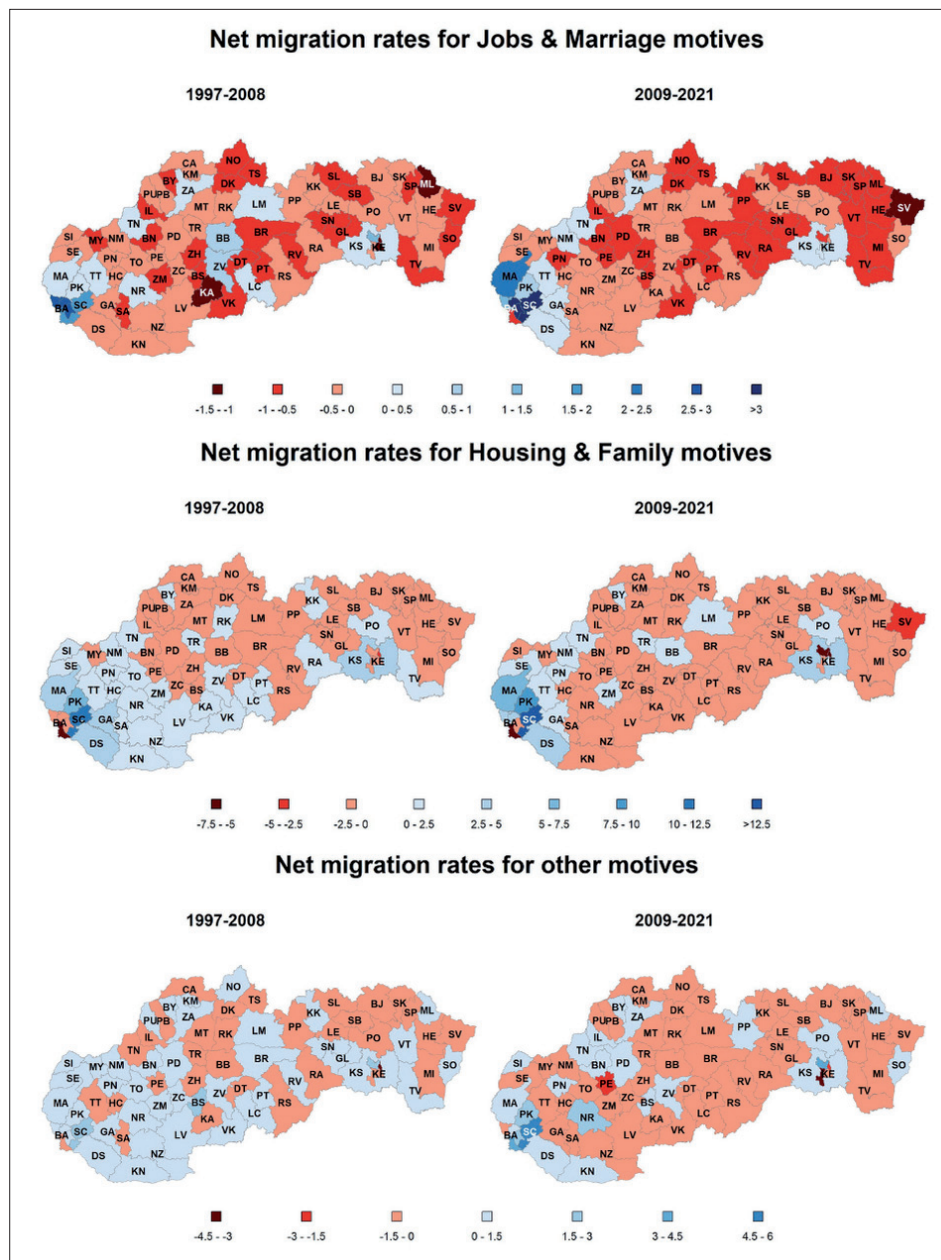


Fig. 4: Geography of major motives for internal migration, net rates per 1,000 population
Source: authors

the 2009–2021 period (Fig. 4, upper panel). Housing consumption was enabled by the latent economy of Bratislava and regional capitals (Košice, Žilina, Trenčín, Žilina and Prešov) (Fig. 4, middle panel). Geographical patterns of ‘other’ migration motives (Fig. 4, bottom panel) seem quite diverse. There is a visible impact of the latent economy of Bratislava and highly urbanised regional capitals on net migration rates. Lifestyle migration may have boosted migration rates in prime tourist districts (Poprad, Piešťany, Banská Štiavnica). Ethnic factors may have impacted rates in districts with Hungarian (Komárno, Dunajská Streda) and Ruthenian-speaking (Medzilabroce) minorities. Pregi and Novotný (2022, 96) suggested that immigration by the Slovak-speaking population decreases the shares of the Hungarian-speaking minority, but their findings relate to the Košice NUTS 3 region. Assumptions on ethnicity-related migration require further verification.

4.5 Alternative spatial structure

The alternative spatial structure entails metropolitan cores, metropolitan hinterlands and nonmetropolitan areas and comprises 70 spatial units. The results for the latter structure are

reported in Tables 5, 6 and 7. The results are quite similar for both spatial structures, but the explanatory power of the structure with 70 units is lower than that with 79 districts.

Each structure has its pros and cons. The spatial focus is the major strength of the structure with 70 units, as it acknowledges significant intraurban flows within the cities of Bratislava and Košice. The shares of intraurban flows in the total interdistrict flows were 11.23% for Bratislava and 6.15% for Košice in 1997–2021 in Slovakia. The structure, however, ignores substantial socioeconomic and sociodemographic disparities between individual districts of Bratislava and Košice cities. The Bratislava 1 district, for example, accounted for the oldest and most affluent population in Slovakia. The median age was 43.7 years in the Bratislava 1 district and 35.5 years in the Bratislava 5 district in the period 1997–2008. The average wage was 19.3%, and the marriage rate was 14.0% higher in the Bratislava 1 district than in the Bratislava 5 district in the same period (SOSR, 2023). Similar disparities were found for the Košice City districts. Socioeconomic and sociodemographic variables are important moderators of migration motives. We

	Net migration rate	Distance to Bratislava (km)	Urban population (%)	Unemployment rate (%)	Marriage rate	Divorce rate	Live birth rate	New flats
1997–2008: 70 districts								
Net migration rate	1							
Distance to Bratislava (km)	–0.457**	1						
Urban population (%)	–0.247*	–0.262*	1					
Unemployment rate (%)	–0.168	0.620**	–0.547**	1				
Marriage rate	–0.148	0.259*	–0.157	0.051	1			
Divorce rate	0.170	–0.470**	0.401**	–0.142	–0.082	1		
Live birth rate	–0.151	0.449**	–0.374**	0.361**	0.913**	–0.185	1	
New flats	0.456**	–0.372**	0.072	–0.530**	0.440**	0.028	0.260*	1
2009–2021: 70 districts								
Net migration rate	1							
Distance to Bratislava (km)	–0.428**	1						
Urban population (%)	0.030	–0.232	1					
Unemployment rate (%)	–0.321**	0.687**	–0.461**	1				
Marriage rate	–0.045	0.228	–0.093	0.043	1			
Divorce rate	0.393**	–0.596**	0.273*	–0.387**	0.176	1		
Live birth rate	0.009	0.303*	–0.252*	0.259*	0.913**	0.101	1	
New flats	0.815**	–0.515**	0.134	–0.551**	0.296*	0.453**	0.244*	1

Tab. 5: Correlation matrix for migration motives and socioeconomic variables. Source: authors' computations based on SOSR (2023) data
Notes: marriage rate, divorce rate, live birth rate, and new flats are stated per 1,000 population; ** significant at the 0.01 level; * significant at the 0.05 level; correlations above 0.5 are in bold

1997–2008			
Component (% of the total variance)	1 (29.48%)	2 (31.62%)	3 (21.61%)
New flats per 1,000 population	–0.796	0.467	–0.056
Unemployment rate (%)	0.899	0.164	–0.179
Distance to Bratislava	0.678	0.286	–0.396
Marriage rate per 1,000 population	–0.073	0.970	–0.046
Live birth rate per 1,000 population	0.203	0.949	–0.176
Urban population (%)	–0.337	–0.215	0.627
Divorce rate per 1,000 population	–0.021	0.002	0.946
2009–2021			
Component (% of the total variance)	1 (36.4%)	2 (30.41%)	3 (16.49%)
Distance to Bratislava	–0.881	0.326	–0.035
New flats per 1,000 population	0.801	0.302	0.002
Divorce rate per 1,000 population	0.737	0.162	0.151
Unemployment rate (%)	–0.746	0.168	–0.409
Live birth rate per 1,000 population	0.071	0.969	0.011
Marriage rate per 1,000 population	–0.025	0.964	–0.174
Urban population (%)	0.168	–0.094	0.966

Tab. 6: Factor analysis. Source: authors' computations based on the SOSR (2023) data
Notes: Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalisation

	Unstandardised coefficients		Standardised coefficients	t	Sig.
	B	Std. error	Beta		
<i>1997–2008; adjusted R-squared = 0.515; F = 28.636, sig. 0.000</i>					
(Constant)	– 0.195	0.214		– 0.914	0.364
F1 (flats, distance, unemployment)	– 0.115	0.215	– 0.061	– 0.534	0.595
F2 (marriage, live births)	– 0.712	0.215	– 0.376	– 3.305	0.002
F3 (urban population, divorce)	– 0.063	0.215	– 0.033	– 0.294	0.770
<i>2009–2021; adjusted R-squared = 0.640; F = 47.177, sig. 0.000</i>					
(Constant)	– 1.048	0.267		– 3.920	0.000
F1 (flats, distance, unemployment, divorce)	1.875	0.269	0.644	6.960	0.000
F2 (marriage, live births)	0.071	0.269	0.024	0.263	0.794
F3 (urban population)	– 0.393	0.269	– 0.135	– 1.458	0.149

Tab. 7: OLS regression (variables significant at the 0.001 level are in bold)
Source: authors' computations based on SOSR (2023) data

argue that the aggregation of urban (and suburban) districts obscures socioeconomic and sociodemographic disparities and misleads the analysis of migration motives.

5. Conclusions, limitations, and directions for further research

This research established that some motives behind internal migration were closely related and informed by the same factors over the long term in Slovakia. Job change, job proximity, and marriage, for example, presented a high correlation across the whole period of 1997–2021. The same conclusion applies to the high correlation between housing and family-related motives (Coulter & Scott, 2015; Gillespie et al., 2021). The findings support the proposition of the life course transition framework (Bailey, 2009). Migration inflows to metropolitan hinterlands, for example, featured prominently in the total net migration rates on regional levels. The flows were likely informed by considerations of housing costs and desirable lifestyles (Vidal & Huinink, 2019, Sandow & Lundholm, 2020, 286).

This research found that most of the stated motives behind internal migration (housing and family) differ from those assumed by socioeconomic theories about returns on human capital (Harris & Todaro, 1970). This finding is valid for motives stated at the proximal level. The analysis of migration rates and housing supply indicates a substantial concentration of interdistrict migrants in suburban districts of affluent metropolitan regions. This finding resonates with that of Morrison and Clark (2011) on the latent importance of employment and income for internal migration. The contradiction between assumptions of the human capital and life course theories diminishes if the 'total private costs of migration' (Sjaastad, 1962, 83) are considered. The psychic cost of migration refers to the trade-off between monetary gains from migration and loss of social networks. As noted by Sjaastad (1962, 85), 'Given the earnings at all other places, there is some minimum earning level at location i which will cause a given individual to be indifferent between migrating and remaining at i '. Migration to metropolitan hinterlands, for example, is a pragmatic solution to the total private costs of migration, as it combines improvements in housing with the preservation of jobs and social networks.

Our research has some important limitations. The research was based on secondary data provided by the SOSR. Our findings are limited by the range and structure of self-reported migration motives. Qualitative research on migration motives suggests that people may report both targeted and diffuse reasons for migration (Coulter & Scott, 2015), and the importance of migration motives may change significantly over the life course (Thomas, 2019; Thomas et al., 2019; Gillespie et al., 2021). The 'other' reasons, for example, accounted for a substantial part of the total migration motives. We were unable to identify a well-defined proxy for this motive.

Longitudinal data on migration motives and corresponding socioeconomic data were provided at the district (LAU 1) level. Our research indicated that the model with 70 territorial units performed worse than that with 79 units. Each aggregation causes loss of original diversity. We argue that there are significant differences between the city districts of Bratislava and Košice cities (including diverse intensities and directions of migration flows). The structure with 79 districts, of course, has its own limitation. For example, it does not correspond with the approximated functional urban regions or approximated functional regions based on daily commuting (Halás et al., 2014).

The limitations suggest directions for further research. Quantitative research on internal migration would benefit greatly from qualitative insight into migration motives over the life course. This research analysed the motives behind interdistrict migration. Further research may also consider differences between intra-district and inter-district migration. It is supposed (Thomas et al., 2019; Gillespie et al., 2020) that short-distance moves are motivated by housing consumption and important life course transitions (marriage, family growth, divorce), while education and employment inform longer-distance migration. Further research may also consider models with alternative spatial structures, such as approximated functional regions based on daily commuting.

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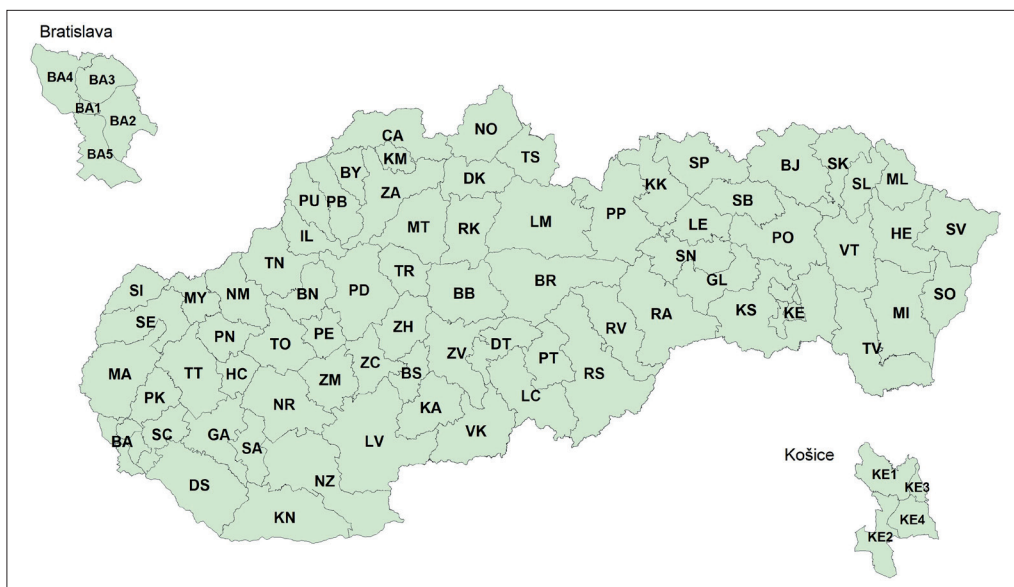
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Appendices

Appendix 1: Spatial structure with 79 districts



Appendix 2: Spatial structure with 70 units

