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Residential mobility and social capital: Regional analysis in Finland

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Abstract

Multiple factors can influence the rates of residential mobility flows between different regions of a country. Studies have often focused on demographic and economic factors, but social conditions may be relevant as well. We examined whether different indicators of social capital (i.e., social support, loneliness, social trust, community participation, cultural activities, and meeting other people) were associated with population migration rates across 299 municipalities of Finland. Data for the social characteristics were derived from the Regional Health and Wellbeing study (n = 100,750 respondents) aggregated to the level of municipalities using multilevel regression with post-stratification (median number of participants was 115 individuals per municipality, range from 5 to 10,616). Residential mobility rates were derived from census data. Municipalities with higher levels of social support, higher social trust, more cultural activities, and more frequent social contacts had higher net migration rates, that is, more people moving in than out of the municipality. Social support, cultural activities, and community participation were associated with higher in-migration. Social trust and frequency of meeting people were associated with lower out-migration. The findings provide empirical support for the hypothesis that regions with stronger social capital are more attractive destinations for within-country residential mobility.

KEYWORDS
Depopulation, Regional, Wellbeing

1 | INTRODUCTION

Internal residential mobility—how people move between different regions of the country—has a crucial impact on regional development (Coulter et al., 2016). Economic factors, such as career opportunities, employment, and housing costs, are important influences on people's residential mobility decisions. However, social and psychological factors are also involved in shaping individuals' decisions regarding moving from one region to another (Caldera Sánchez & Dan, 2011). For example, family members tend to live close to each other, and people often move because of changes in their family relationships (e.g., marriage, divorce, parenthood) or because they are dissatisfied with the current neighborhood or apartment (Jokela, 2021). Our current study

explores how social factors are related to migration flows at the regional level.

Studies of "neighborhood effects" have shown that *social capital* is one of the neighborhood features associated with better health and wellbeing of the residents (Perkins et al., 2009; Wang & Wai Li, 2020). Social capital is a broad term that has been conceptualized in many ways in different disciplinary contexts. One of the general definitions of social capital describes it as the social networks and other social structures that provide benefits to the individuals who belong to those networks or structures (Portes, 1998). Social capital can additionally refer to the collective norms, trust, and values that allow collective action to flourish (Woolcock & Narayan, 2000). In empirical studies, social capital has been measured with different indicators, including strong and weak social ties with family members, friends, or neighbors; rate of memberships in voluntary social associations and clubs; availability of social contacts and social support; perceptions of community social cohesion; and trust in institutions and other people (Malecki, 2012; Woolcock & Narayan, 2000; D'Ingiullo et al., 2023; Mulder & Gillespie, 2024). Here we will use the term social capital as an umbrella term for different aspects of social activity, social resources, and social participation; we do not tie the concept to any specific theoretical conceptualization of social capital.

Regional social capital could be related to residential mobility flows via multiple causal processes. First, high local social capital might attract new movers, whereas the lack of social capital might increase the probability of current residents moving away. Second, differential rates of in-migration and out-migration could change the composition of residents—and thereby the levels of regional social capital. If individuals who move have better social resources than non-movers, then their in-migration into a region would increase the region's social capital. Conversely, higher rates of out-migration could deplete levels of social capital, especially if the individuals moving out were the ones with higher social resources. Third, the associations between residential mobility and social capital could develop together with overall migration flows that are driven by other factors besides social capital but that correlate with levels of social capital. For instance, urbanization and migration into metropolitan areas could lead to correlations between regional social capital and migration flows if the characteristics associated with urbanization (e.g., age, socioeconomic status, family status) correlated with the

Some empirical studies have addressed the association between social capital and migration flows at the regional level. In Italy, higher social capital was associated with lower migration flows between the 103 Italian provinces, especially for migration flows of low-skilled individuals (D'Ingiullo et al., 2023). The social capital of the provinces was measured as the aggregate of the number of cooperatives, the number of associations, election participation, books published, and books purchased in bookshops. The authors suggested that individuals with lower socioeconomic status may be more dependent on social networks because their employment opportunities in new locations are more limited than those of individuals with higher socioeconomic status.

In the United States, higher county-level social capital— as measured by presidential voting activity, census response rate, and number of tax-exempt organizations—was associated with higher rates of in-migration and lower levels of out-migration (Lesage & Ha, 2012). This would be in line with the hypotheses cited above suggesting that social capital functions as a regional attractor of migration flows. A multi-nation study of 14 European countries reported that more social capital (frequency of meeting friends and neighbors, and prevalence of memberships in associations) was associated with lower residential mobility rates away from the region (David et al., 2010).

In a census-tract level study from the United States, higher rates of in-migration were associated with lower political engagement and community involvement in the neighborhood (Hotchkiss, Rupasingha & Watson, 2021). This contrasts with the individual-level studies showing that higher neighborhood social capital would be an attractor of in-migration (Büchel et al., 2020). However, the population-level association might represent a different social mechanism than the individual-level associations between specific individuals: higher in-migration rates may introduce social disorganization at the neighborhood level, thus decreasing neighborhood social cohesion (Hotchkiss, Rupasingha & Watson, 2021).

Another line of empirical research has explored the associations between social capital and residential mobility at the individual level (Clark & Lisowski, 2019; Kleinhans, 2009; Sharp & Warner, 2018). Family ties have been shown to be particularly important in promoting residential stability, or moving closer to family members, including return migration (Dawkins, 2006; Mulder & Gillespie, 2024; Gillespie et al. 2022). Friend networks have also been shown to influence mobility decisions. In Switzerland, long-distance moves between regions were more common among individuals with small social networks that were centered around friends and siblings, but not around other family members (Drevon et al., 2021). Supporting these findings, studies of personality traits and residential mobility have shown that individuals with higher agreeableness—a personality trait characterized by warmhearted and friendly dispositions—tend to move less often than those with low agreeableness, which may be because individuals with high agreeableness have stronger attachments to their community and its residents (Jokela, 2009, 2021).

Social contacts in the potential mobility destinations can guide migration decisions, too. Using cellphone communication data, a Swiss study showed that the presence of social contacts in a location increased the participants' probability of selecting that location when they moved; this was particularly true for social contacts that were reachable within a travel time of 10 min (Büchel et al., 2020). The cellphone data also showed that people whose social contacts were located close to their current residence were less likely to move. Stronger social ties might make the region a more attractive migration destination as social connections can enhance the liveliness and vitality of the region (David et al., 2010; Kan, 2007). Data from the United States suggested that people are more likely to move to neighborhoods that have higher social capital than their current location (Hotchkiss & Rupasingha, 2021).

Thus, the research literature on social capital and residential mobility suggests that social capital can decrease people's willingness to move away, so as not to break the social bonds with their community and relatives (Ghosh et al., 2018); Kan, 2007). Social capital can also increase people's willingness to move to destinations in which they already have friends or relatives (Büchel et al., 2020). At the population level, higher migration rates can be detrimental for the accumulation of social capital if they create social disorganization. These processes and mechanisms related to social capital may help to better understand migration flows and related demographic trends, such as drivers of regional depopulation. However, regional-level research on social capital and migration flows is limited.

Our current study builds on the previous research exploring the associations between regional social capital and residential mobility rates. We examined whether different kinds of municipality-level indicators of social capital (i.e., social support, loneliness, social trust, community and cultural activities, and meeting other people) were associated with between-municipality residential-mobility rates in Finland. Our regional analysis combined survey data on social capital (n = 100,750) and registry data on migration rates and municipality covariates. We hypothesized that net migration rates (i.e., more people moving in than out) would be higher in municipalities characterized by higher social capital. We also examined rates of in-migration and out-migration separately to see whether the same municipality characteristics were relevant for people moving in and moving out of the municipality.

2 | METHODS AND MATERIALS

Finland has the lowest population density of all the European Union countries, with an average of 18 individuals per square kilometer, compared to 109 individuals per square kilometer which is the average population density across all European Union countries (Eurostat, 2023). During the last 50 years, most of the regions of Finland have witnessed sizable migration from rural regions towards the main urban centers: the Helsinki metropolitan area in the Uusimaa region, Turku in the Varsinais-Suomi region, and Tampere in the Pirkanmaa region. Other regions (especially Satakunta, Pohjois-Pohjanmaa, and Kainuu) have predominantly lost inhabitants. Uusimaa has served as the main attractor of in-migration: when Finns are not moving to Uusimaa, they tend to move across neighboring regions. Most Finns continue to live or return to the same region as their parents and siblings (Ghosh et al., 2018).

For the present analysis, data for social-capital indicators were derived from the Finnish national survey data Regional Health and Wellbeing (Alueellinen Terveys ja Hyvinvointi), which was carried out by the Finnish Institute for Health and Welfare between 2012 and 2017 in 6 separate survey waves. Each survey collected data from different respondents aged 20 or more, resulting in a total of 100,750 individuals from 299 municipalities. Ten small municipalities with only a few respondents were left out from the study sample due to anonymization requirements (located mostly in the southwest archipelago of Åland). The median number of participants per municipality was 115 individuals (mean = 304, interquartile range from 52 to 251), with the minimum being five and a maximum of 10,616 individuals in a municipality.

Social support. Participants were asked to identify from whom they could get support when needed, choosing from the following categories of relationships: spouse/partner, close kin members, close friends, close colleagues, close neighbors, other individuals, or nobody. Regarding each relationship, respondents were asked whether they could receive emotional support ("Who do you believe truly cares about you, whatever may happen?") or practical help ("Who will provide practical help when you need it?") from individuals belonging to that category. A total sum score was calculated across all the relationships (ranging from 0 to 12).

Loneliness was assessed by the question: "Do you ever feel lonely", with a response scale from 1 (never) to 5 (all the time).

Social trust was assessed by asking to what extent the respondent felt trust towards institutions (healthcare, social welfare, judiciary, police, municipal decision) and people in general with a scale from 1 (no trust) to 5 (complete trust), which were added together for the variable used in the analysis.

Community participation was assessed by asking how often the respondent participated in organizations or communities around the following activities: sport, culture, politics, unemployment, church/religion, older people, youth organizations, or in informal friend group activities. Each activity was rated with a 5-point scale: 1 = never, 2 = less than once a month, 3 = 1–3 time a month, 4 = 1–2 times a week, and 5 = 3 or more times a week. The items were added together for the variable used in the analysis.

Participation in *cultural activities* was assessed by the frequency of going to theater, concerts, museums, libraries, cinema, sports, and other culture happenings. The responses were rated on a scale from 0 to 3 (0 = no participation in the last 12 months, 1 = a couple times a year, 2 = 1–3 times a month, 3 = at least once a week). The items were added together for the variable used in the analysis.

Frequency of meeting others was assessed with a single item asking "How often are you in face-to-face contact with your friends and relatives who do not live in your household?" rated as 1= daily, 2 = 1–3 times per week, 3 = 1–3 times per month, 4 = less than monthly, 5 = never.

Data for *residential mobility rates* were obtained from Statistics Finland population registries (https://stat.fi/). We used the 3-year averaged rates from 2017 to 2019 for within-country in-migration, out-migration, and net-migration, each expressed as moves per 1,000 inhabitants of the municipality.

Covariates included population size (number of inhabitants), population density (number of inhabitants per square kilometer), the average age of the inhabitants, and socioeconomic status (sum of standardized values of average taxable monthly income, average years of education beyond mandatory schooling per person, and employment rate of the workforce).

All the sum scores derived from the survey data were created as additive indices without any differential weights for different items and

without standardization at this point. There were some missing values across the items, but these were not imputed, and so a sum score was not calculated for participants with missing values in that scale.

2.1 | Statistical analysis

All the survey years were pooled together in a single data set to get sufficient numbers of participants for the municipalities. For calculating the aggregated municipality-level survey measures, we used multilevel regression with post-stratification to get more representative estimates for the municipalities (Downes & Carlin, 2020; Hanretty, 2020). Instead of merely calculating the mean value of the respondents in each municipality, multilevel regression with post-stratification makes it possible to weigh the survey responses to better match with the demographic characteristics of the municipality. For each survey measure of social capital, we fitted a random-effect regression model with age group (20–34, 35–49, 50–65, 65 and older), sex (male/female), and municipality as the random-effect predictors, and the social capital indicator as the outcome variable. We then used post-stratification based on census population frequencies of age-by-sex groups of each municipality to predict the municipality-level estimates so that the random-effect estimates were weighted by census data to correctly match the age-by-sex composition of the municipality (details of these calculations are available upon request from the corresponding author). This method has been shown to improve the representativeness of the estimates from survey data (Downes & Carlin, 2020; Hanretty, 2020).

The regression models predicting migration rates were fitted with spatial autoregressive error models that took into account the spatial autocorrelation between neighboring municipalities. Different predictor variables had very different ranges, means, and standard deviations, which did not have intuitive interpretations. The standard deviations of the aggregated survey measures were very small, so a 1-unit difference in the regression model would not even be plausible for some of them (e.g., the standard deviation of loneliness was 0.03; Table 1). To ease the interpretation of the regression coefficients, and to allow better comparisons across different predictors, we recoded all the predictor variables by dividing the original score with the difference score between the 90th and 10th percentile of the variable. This way the regression coefficient of each variable indicated the difference in migration rate (scored as migrations per 1000 inhabitants) associated with high versus low value of the predictor variable (i.e., 90th and 10th percentile). This did not influence the statistical significance of the associations but only made the regression coefficients easier to interpret and to compare with each other.

3 | RESULTS

Descriptive statistics of the sample are shown in Table 1. Figure 1 shows the clustering of high and low net migration rates in Finland, illustrated with the Getis–Ord hotspot analysis that gives high values for municipalities that have high net migration rates and that have neighboring municipalities with high net migration rates. The Helsinki metropolitan area in the south and the Tampere and Turku region stand out as high net migration rates, whereas the northwest region of Ostrobothnia has the most marked concentration of low net migration rates. Of the 299 municipalities, 253 were losing people (at the rate of 8.5 persons per 1,000 inhabitants) and 46 were gaining people (at the rate of 5.7 persons per 1,000 inhabitants).

Net migration rate correlated more strongly with rates of in-migration (r = 0.63) than out-migration (r = 0.07), and the rates of in-migration and out-migration correlated strongly with each other (r = 0.82). The spatial autocorrelations were moderately high for net migration (Moran's I = 0.51), in-migration (0.66), and out-migration (0.50). Table 2 shows the Pearson correlations between study variables. Most of the correlations between indicators of social capital were low or moderate in magnitude, suggesting that the different aggregated measures were not all measuring the same underlying regional difference.

TABLE 1 Aggregate descriptive statistics of the 299 Finnish municipalities in the Regional Health and Wellbeing Survey and Finnish population statistics.

Data	Mean (SD)	Min to Max
Regional Health and Wellbeing Survey		
Social support	3.99 (0.16)	3.6 to 4.5
Loneliness	2.18 (0.03)	2.1 to 2.3
Social trust	20.4 (0.4)	19.3 to 21.7
Community participation	10.4 (0.3)	9.4 to 11.5
Cultural activities	11.8 (0.4)	10.9 to 13.4
Meeting people	3.45 (0.06)	3.3 to 3.6
Finnish population statistics		
Net migration rate (persons per 1000 inhabitants)	−6.35 (7.14)	−30.9 to 23.5
In-migration rate (persons per 1000 inhabitants)	44.2 (12.5)	16.0 to 108.8
Out-migration rate (persons per 1000 inhabitants)	50.6 (9.8)	20.6 to 97.6
Population size (1000 inhabitants)	18.37 (49.33)	0.5 to 645.3
Population density (inhabitants/km2)	62.89 (244.65)	0.2 to 3026.4
Average age (years)	52.0 (3.3)	43.0 to 59.3
Taxed income (100 euros per person)	36.0 (5.5)	23.7 to 70.8
Education (composite score)	312 (49)	218.9 to 590.1
Employment (%)	90.2 (2.8)	82.7 to 97.0

Note: Values are means (and standard deviations). *N* = 299 municipalities based on survey responses of 100,750 individuals.

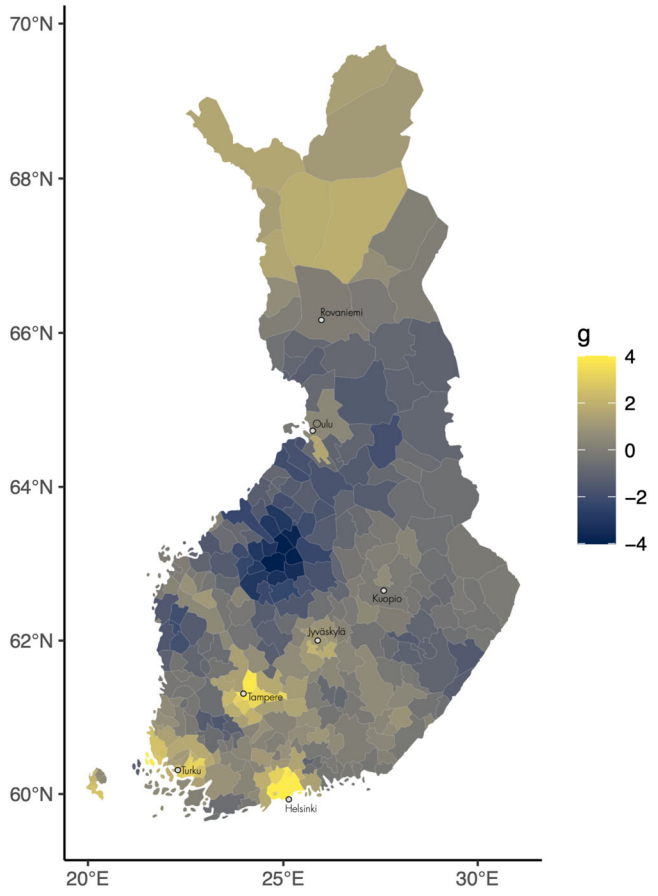

FIGURE 1 Clustering of high (yellow) and low (dark blue) rates of net migration in Finland 2017-2019. The values are z-scores of a Getis–Ord hotspot analysis that gives higher values to municipalities that have high net migration and that have neighboring municipalities with high net migration rates. Data are from Finnish population statistics.

Table 3 shows the associations separately for in-migration and out-migration. Social support, community participation, and cultural activities were associated with higher in-migration. Higher social trust and higher frequency of meeting people, in turn, were associated with lower out-migration rates. These associations did not substantially change in the mutually adjusted models, except that the association of community participation attenuated to nonsignificant.

The associations of net migration rates are shown in Table 4. Unadjusted for other social variables, higher net migration was associated with higher social support, higher social trust, higher cultural activities, and frequency of meeting people, and with lower loneliness (Table 3, **Model 1**). Adjusting for socioeconomic status and average family size did not substantially change these associations (Table 3, Model 2). In the mutually adjusted model with all the covariates in a single model, social trust and cultural activities were associated with higher net migration (Table 3, Model 3). Supplementary Table 1 reports the full model indices for the multivariable models of net migration, in-migration, and out-migration.

4 | DISCUSSION

We found that indicators of social capital were associated with differences in the rates of migration flows in and out of different regions of Finland. Across 299 Finnish municipalities, higher aggregated levels of social support, social trust, cultural activities, and frequency of meeting people were associated with higher net migration rates of municipalities. These associations were observed even when adjusted for many covariates related to population structure and socioeconomic status. Our study contributes to a better understanding of how different aggregate measures of regional social capital can be related to migration flows at the population level. This extends previous research literature that has mostly focused on individual-level associations between social capital and residential mobility decisions.

The findings need to be interpreted within some methodological limitations. First, the analysis examined migration rates without considering more detailed features of migration flows. A considerable proportion of moves between municipalities take place between adjacent municipalities, and the social factors related to these neighboring moves may be different from the social factors associated with long-distance moves (Nivalainen, 2004; Shuttleworth et al., 2020). Other features of the origin-destination differences (e.g., migration flows to cities vs. rural areas) and the movers (e.g., educational level or age group) should also be examined in more detail. Second, the associations observed with regional measures do not necessarily reflect their individual-level associations (Sedgwick, 2015), so the associations reported here may not be directly comparable to studies that examine the residential mobility of individuals rather than aggregated mobility rates. Third, the present analysis cannot demonstrate that the indicators of social capital are causally related to higher net migration rates, because evaluating causality would require a study design in which the regional features could be manipulated—or examined longitudinally before and after some changes in regional social capital—which was not the case in our study.

The present study has many strengths. We used large survey data which allowed us to assess regional variation in social characteristics. Such characteristics are usually not available for demographic analysis of residential mobility. Multilevel regression with post-stratification ensured that the regional estimates for survey measures were more representative in terms of gender and age structures across different municipalities. The combination of survey and registry-based demographic data on residential mobility, analyzed using rigorous methods, provides a more comprehensive perspective on the factors associated with regional mobility flows.

The associations between social capital and net migration rates suggest that municipalities with higher social capital tend to be more attractive locations with respect to residential mobility. This is in line with previous regional analyses (D'Ingiullo et al., 2023; (Lesage & Ha, 2012) (David et al., 2010). The difference in net migration rates between municipalities with high compared to low social support was of a similar magnitude as the difference between municipalities with

TABLE 2 Correlation coefficients (Pearson's r) between study variables (n = 299 municipalities).

	1	2	3	4	5	6	7	8	9	10
1. Social support	–									
2. Loneliness	−0.13	–								
3. Social trust	0.17	−0.12	–							
4. Community participation	−0.04	−0.11	0.32	–						
5. Cultural activities	0.68	−0.01	0.09	−0.03	–					
6. Meeting people	0.20	0.06	0.09	0.14	0.15	–				
7. Average age	−0.89	−0.06	−0.12	0.15	−0.61	−0.27	–			
8. Population size	0.58	0.13	−0.12	−0.30	0.63	0.16	−0.63	–		
9. Population density	0.68	−0.03	0.03	−0.16	0.70	0.23	−0.66	0.72	–	
10. Socioeconomic status	0.73	−0.20	0.21	0.07	0.61	0.18	−0.64	0.46	0.67	–
11. Family size	0.49	0.00	0.22	0.13	0.10	0.14	−0.63	0.01	0.10	0.22

Note: Data from the Finnish Regional Health and Wellbeing Survey (data from 100,750 participants aggregated into 299 municipalities).

TABLE 3 In-migration and out-migration rates associated with indicators of social capital in 299 Finnish municipalities.

	In-migration		Out-migration	
	Model 1	Model 2	Model 1	Model 2
Social support	**9.5 (4.8, 14.3)**	**7.9 (2.6, 13.1)**	4.4 (−0.4, 9.2)	**5.6 (0.3, 10.8)**
Loneliness	−0.7 (−2.8, 1.4)	0.4 (−1.7, 2.6)	1.2 (−0.8, 3.3)	1.9 (−0.3, 4.1)
Social trust	0.6 (−1.5, 2.6)	−0.3 (−2.4, 1.7)	**−2.0 (−4.0, 0.0)**	**−2.3 (−4.3, −0.2)**
Community participation	**2.4 (0.4, 4.4)**	1.3 (−0.9, 3.4)	0.5 (−1.5, 2.5)	0.7 (−1.5, 2.8)
Cultural activities	**5.0 (2.0, 7.9)**	**3.7 (0.7, 6.8)**	1.4 (−1.6, 4.3)	1.2 (−1.9, 4.2)
Meeting people	−1.4 (−3.8, 1.0)	−2.0 (−4.3, 0.4)	**−2.9 (−5.2, −0.6)**	**−2.9 (−5.1, −0.6)**
Average age	**−11.5 (−14.8, −8.3)**	**−25.5 (−32.0, −19.0)**	**−6.3 (−9.4, −3.1)**	**−22.7 (−29.2, −16.3)**
Population size	0.9 (−1.6, 3.4)	**−19.2 (−22.9, −15.5)**	**−4.4 (−6.8, −2.1)**	**−21.0 (−24.8, −17.3)**
Population density	**9.5 (6.2, 12.7)**	**8.7 (4.3, 13.1)**	**3.0 (0.0, 6.1)**	**6.6 (2.4, 10.8)**
Socioeconomic status	**13.4 (10.2, 16.7)**	**6.8 (3.5, 10.2)**	**7.1 (4.0, 10.1)**	2.8 (−0.5, 6.0)
Family size	2.3 (−0.3, 4.9)	**−9.2 (−12.5, −5.9)**	**3.9 (1.5, 6.3)**	**−7.0 (−10.3, −3.7)**

Note: Data are from the Finnish Regional Health and Wellbeing Survey (data from 100,750 participants aggregated into 299 municipalities), except migration data are from Finnish population statistics. Values are regression coefficients from spatial autoregressive error models fitted separately for each predictor variable (Model 1) or together in mutually adjusted multivariable model (Model 2). All associations are adjusted for municipality's average age, population size (log-transformed), population density (log-transformed), socioeconomic status, and the municipality's average family size. The coefficients express the difference in net migration rate (persons per 1000 inhabitants) associated with the difference between high (90th percentile) and low (10th percentile) values of the predictor. Coefficients printed in bold are statistically significant ($p < 0.05$).

high vs low population size, population density, mean age, or socioeconomic status (most coefficients comparing the 90th percentile against the 10th percentile in the municipality variable ranged between 6 and 8; Table 1). The magnitude of associations for frequency of meeting people, social trust, and cultural activities were slightly lower but nevertheless meaningful (coefficients between 2.9 and 5.5). Thus, the social capital of the region was almost as important a correlate of migration patterns as the more established sociodemographic factors.

Social ties might be important for both in-migration and out-migration. We observed that two of the indicators (social trust and meeting people) were more strongly associated with out-migration, whereas another three of the indicators (social support, community participation, and cultural activities) were more strongly associated

TABLE 4 Net migration rates associated with indicators of social capital in 299 Finnish municipalities.

	Model 1	Model 2	Model 3
Social support	**6.5 (2.7, 10.2)**	**4.6 (0.8, 8.5)**	1.8 (−2.5, 6.0)
Loneliness	**−2.1 (−3.8, −0.5)**	**−1.8 (−3.4, −0.1)**	−1.5 (−3.2, 0.2)
Social trust	**2.9 (1.4, 4.5)**	**2.6 (1.0, 4.1)**	**2.3 (0.7, 3.9)**
Community participation	1.4 (−0.2, 3.0)	0.8 (−0.8, 2.3)	−0.7 (−2.3, 1.0)
Cultural activities	**4.3 (2.0, 6.5)**	**3.3 (1.0, 5.6)**	**2.3 (0.0, 4.7)**
Meeting people	**5.5 (2.3, 8.6)**	**4.0 (0.8, 7.2)**	2.6 (−0.9, 6.1)
Average age	**−6.8 (−9.0, −4.6)**	−4.4 (−9.4, 0.5)	−0.4 (−6.7, 5.9)
Population size	**6.1 (4.5, 7.8)**	1.5 (−1.4, 4.5)	2.3 (−0.6, 5.2)
Population density	**7.6 (5.6, 9.6)**	1.1 (−1.9, 4.2)	−0.5 (−3.5, 2.6)
Socioeconomic status	–	**4.9 (2.5, 7.4)**	**2.9 (0.3, 5.6)**
Family size	–	**−3.7 (−6.2, −1.1)**	**−3.1 (−5.7, −0.5)**

Note: Data are from the Finnish Regional Health and Wellbeing Survey (data from 100,750 participants aggregated into 299 municipalities), except migration data are from Finnish population statistics. Values are regression coefficients from spatial autoregressive error models fitted separately for each predictor variable (Models 1 and 2) and in a single multivariable model (Model 3). Model 1 adjusts for the municipality's average age, population size (log-transformed), and population density (log-transformed). Model 2 additionally adjusts for socioeconomic status (composite score of education, tax income, and employment rate) and municipality's average family size. Model 3 is a multivariate model that includes all the covariates and adjustments included in Model 2. The coefficients express the difference in net migration rate (persons per 1000 inhabitants) associated with the difference between high (90th percentile) and low (10th percentile) values of the predictor. Coefficients printed in bold are statistically significant ($p < 0.05$).

with in-migration. Many previous individual-level studies have associated higher social capital, especially family relations, with lower out-migration (Dawkins, 2006; Mulder & Gillespie, 2024; Gillespie et al. 2022), and similar associations have been reported in regional studies (Kan, 2007) (David et al., 2010). The lower out-migration associated with social capital is probably explained by people's unwillingness to leave locations that provide them with social resources and community cohesion (Mulder & Gillespie, 2024). Indeed, the frequency of meeting other people and social trust were the two indicators that predicted lower out-migration, and these indicators probably reflect the average degree of people's social attachment to their current location. Local social capital can be particularly relevant for out-migration because people who live in the region have direct observations about the region's social-capital features.

Some previous studies have shown that social capital may also be relevant for in-migration (Büchel et al., 2020). Potential movers may view municipalities with stronger ties as more attractive destinations because regions with stronger social ties can provide better living circumstances for the new inhabitants (Wang & Wai Li, 2020). How can new movers know about the social capital of a region before moving there? First, many movers may have already lived there earlier, or have relatives or friends in the new destination, as these influence people's mobility decisions (Lőrincz & Németh, 2022). Second, municipalities may have different reputations that people can use as information in deciding whether to move there. Third, some of the measures of social capital might correlate with observable neighborhood characteristics, such as differences in types of houses, which people use when selecting mobility destinations, even if they did not know that such observable characteristics correlate with indicators of social capital (cf. Gebru et al., 2017). Cultural activities and community participation, which were associated with higher in-migration, are perhaps the most outwardly visible indicators that potential movers can perceive even without knowing anyone in the destination: being aware of the venues and public happenings of culture, sport, and other activities do not require insider information. Social support, which was also associated with higher in-migration, may be less easy to perceive by outsiders, so its association with in-migration might represent the people's social networks or the social cohesion of the region.

It is worth noting that many of the correlations between the different regional indicators of social activities, resources, and participation were rather modest (Table 2). This suggests that not all these indicators of "social capital" are measuring the same underlying dimension of high versus low social capital at the regional level. Future research should examine whether some of the social variables are better suited for regional-level analysis than others, and whether there is a more complex factor structure of social dimensions that characterize regional differences in the different forms of social interaction and participation.

To conclude, the present results suggest that the strength of regional social capital is related to residential mobility flows within Finland. Municipalities in which residents reported higher levels of social support and trust, more active participation in cultural activities, and more frequent meetings with other people, were most likely to receive more new inhabitants than losing old inhabitants (i.e., higher net migration rates). The findings provide additional evidence on the importance of social capital in understanding migration flows and regional development. Further studies are needed to test

whether indicators of social capital could be used to improve forecasts of regional population change, over and above the current models of regional forecasting (Capello et al., 2017).

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from Findata. Restrictions apply to the availability of these data, which were used under license for this study. Data are available from https://findata.fi with the permission of Findata.

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