Ethnic segregation profiles and educational outcomes: Do migrant enclaves promote academic aspirations?

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Educational outcomes among youth with a migrant background

One of the primary consequences of increased international migration to Sweden has been the emergence and establishment of successive generations of descendants of immigrants. Among recent cohorts, the share with parents born in Europe is decreasing, while the share with Asian parents is on the increase. One of the key challenges for Swedish society is to ensure that descendants of immigrants have equal prospects in society, such that they do not experience inequality as compared to native-born with native-born parents (the majority population).

Socioeconomic integration is often seen as the most important pathway for immigrant integration and inclusion into society. For the largest migrant groups, refugees and family migrants, labour market integration has been slow in Sweden. Descendants of immigrants have lower employment rates and lower earnings than those with native-born parents, especially so when both parents are born outside of Europe (Aradhya et al. 2023; Rooth and Ekberg 2003). Although descendants of migrants fare much better in educational attainment and labour market establishment than their parents, they are substantially lagging behind native-born peers with native-born parents (Aradhya et al. 2019; OECD 2018).

Sweden stands out with second generation youth being more likely to be early school leavers and less likely to be highly educated than the majority population. Especially descendants of non-European immigrants do not enrol in upper secondary education (Jonsson and Rudolphi 2011). Young people with a migrant background perform worse in terms of reading ability, school performance, and leave school earlier than their peers with native-born parents, with boys performing worse than girls (OECD 2018). A substantial share of these differences is though explained by these students' parents' lower socioeconomic status (Behtoui et al. 2019). Other reasons for the lagging behind can be found in everyday practices of discrimination in schools and on the labour market (Arai and Skogman Thoursie 2009; Behtoui et al. 2019), lower levels of social capital and smaller social networks (Behtoui 2004), the intergenerational transmission of language, culture and identity (Bleakley and Chin 2008), and neighbourhood effects.

On the other hand, educational aspirations tend to be higher in ethnic minority groups than the majority society (Rudolphi and Salikutluk 2021), which is sometimes seen as making up for their parents not being able to fully establish themselves in the host country labour market (Forsberg 2021; Urban 2012). In Sweden, young people with a migrant background more often choose academic instead of vocational programmes in upper secondary education compared to the majority population (Jonsson and Rudolphi 2011; Rudolphi and Salikutluk 2021), which leads to compensatory advantages in the educational system. This is in line with the immigrant optimism perspective (Kao and Tienda 1995), meaning that youth with a migrant background tend to have more ambitious educational aspirations and choices, though their grades tend to be lower. These higher aspirations tend to be explained by the wish for intergenerational upward mobility among immigrant families, who may fight discrimination and blocked opportunities.

For young people with a migrant background, educational aspirations may be highly affected by their peers, and what prevalent norms and attitudes in the neighbourhood on such issues are (Stuij 2015). The social spaces where young people meet peers and adults shape the arenas for collective socialization. Where people spend their time is dependent on processes of socialization through the family, the peer network, schools, local institutions and the neighbourhood. People's individual habitus (Bourdieu 1984) affect people's networks, and their knowledge and access to institutions such as schools. This may result in groups making similar choices, such as young people from a certain neighbourhood choosing a local school or choosing schools in other neighbourhoods (Forsberg 2022), influenced by norms, networks, and the varying ability to mobilize social and cultural capital. This leads us to consider the role of ethnic segregation.

The role of residential segregation in educational outcomes for the second generation

Residential segregation is often credited for contributing to the increased disparities and inequalities for vulnerable groups in society. Increasing flows of migrants to Sweden have intensified existing patterns of segregation, leading to concentrated disadvantage (Malmberg et al. 2018). In addition, liberalization in the Swedish housing market has since the 1990s led to increased residential segregation as low-income households are being forced to live in affordable housing in the suburbs (Arbaci 2007). Immigrants and their descendants tend to live in more ethnically segregated neighbourhoods compared with neighbouring countries (Andersson et al. 2018). Descendants of immigrants more often live in deprived neighbourhoods, and are more likely than the majority population to remain in such areas (Vogiazides and Chihaya 2020).

There is a burgeoning literature showing that segregation can have negative effects on individual outcomes such as educational attainment and employment (Andersson and Malmberg 2015; Aradhya et al. 2021; Brandén et al. 2023; Bygren and Szulkin 2010; Wimark et al. 2019). Recent studies have shown that neighbourhood effects are larger for residents in the most advantaged and the most disadvantaged neighbourhoods, and that neighbourhood effects may be underestimated when using administrative units instead of individualized neighbourhoods (Andersson and Malmberg 2015; Wimark et al. 2019), taking into account spatial flexibility (Sampson 2012), i.e., not fixing on one specific neighbourhood scale. In addition, neighbourhood effects may be heterogeneous depending on gender, with stronger effects for young men (Galster et al. 2010). The mechanisms of how the neighbourhood affects individual outcomes are however far from understood, though scholars generally agree on the combined effects of collective socialisation, local norms, social networks, stigmatisation and a lack or poor quality of local institutions (Sampson 2012).

Segregation research has for decades engaged with the issue of scale. The multi-scalar nature of segregation has been given substantial attention in the literature (Clark et al. 2015; Fowler 2016; Östh et al. 2014; Reardon et al. 2008). It is agreed that segregation cannot be attributed to a single scale level (Jones et al. 2015), but instead can occur simultaneously at multiple geographical scales. Approaches to incorporate scale include using individualized neighbourhoods, distinguishing between micro and macro segregation, and the use of segregation profiles. Segregation profiles were proposed to solve methodological problems inherent to most segregation measures and approaches. These profiles are curves, in which a number of scales are combined to describe segregation patterns: including the immediate local surroundings, the meso-level surroundings as well as broader regional residential settlement patterns (Fowler 2016). The conceptualization of segregation at different scales enables the identification of the extent to which segregation levels are due to micro- or macro-levels of segregation (Reardon et al. 2008), and are an excellent tool to visualize segregation processes at multiple scales.

Using segregation profiles also combines well with how neighbourhoods may be perceived by its residents. People may be impacted by their immediate neighbourhoods as well as what is going on in adjacent and even further-off larger-scale neighbourhoods. In addition, it also closely connects to the theoretical discussion of the potential effects of segregation. Different types of social interaction are associated with different outcomes based on distance decay (Petrović et al. 2022; Reardon et al. 2008). For instance, large-scale segregation patterns may be associated with negative consequences such as unemployment (Andersson and Malmberg 2016), while micro-scale segregation could be linked to increases in intermarriage, and ethnic enclaves might be conducive to increased entrepreneurship levels for newcomers (Andersson and Hammarstedt 2015).

Such discussions link to different models of migrant accommodation, that are associated with conflicting views of segregation. Originally, concentrations of immigrants were seen as a natural phenomenon, since newcomers needed support networks to manage life in the new country (Park 1925). Later, a distinction was made between ethnic enclaves and ghettos, with the former seen as a positive phenomenon, as areas where ethnic networks were perceived to boost immigrant employment (Wilson and Portes 1980). Such places were perceived to have moderate-to-high levels of ethnic distinctiveness, characterized by voluntary settlement (Boal 1976). Ghettos, on the other hand, were seen as the result of involuntary movement, with high levels of ethnic distinctiveness (Peach 2010).

The negative effects of segregation are discussed much more than its positive effects (Musterd 2023). Andersen (2020) contended that ghettos foster social and geographic exclusion to a higher degree than enclaves. In the European context, the ghetto is a loaded term that can be used to stigmatize minority group residents (Finney and Simpson, 2009) - one example is the Danish ghetto policy. According to Wacquant (1999), Peach (2007) and Malheiros (2002), there are hardly any

ghettos in Europe, as ethnic neighbourhoods consist of many different groups instead of mono-ethnic groups (as in the US), who have moved there voluntarily. According to Andersson (2007), there are neither ghettos nor enclaves in Sweden, but there are small colony-like clusters and local pockets of the "enclave type", though systematic studies are lacking.

There is also not much discussion on the role of scale, though ghettoization in the US is generally perceived to be large-scale (Peach 1996). Social interaction has been argued to be more difficult in ghettos compared to ethnic enclaves (Peach 1996), implying that large-scale segregation hinders such contacts (Lee et al. 2008). Peach (1996) also argued that there are many positive factors associated with segregation, such as fostering social solidarity, and the maintenance of group language and norms. However, how these positive factors play out in terms of integration outcomes such as educational outcomes, is rather unclear.

The aim of this paper is to examine how ethnic segregation profiles are related to school choice at age 16, for boys and girls with and without a migration background. We ask: how are segregation profiles, that summarize segregation patterns at different scales, associated with the educational aspirations and choices for youth with a migrant background, and how do they differ by gender?

Data and methods

We use Swedish register data for the year 2022 for Stockholm county. Stockholm county has a population of 2,5 million inhabitants and includes not only Stockholm municipality but also 25 adjacent municipalities, some of which are highly segregated. The data include information on family background, migrant origin, geographical location of the individual's property detailed at the 100-meter grid level, and educational outcomes at age 16 (the end of compulsory education).

After finishing compulsory education, the majority of pupils in Sweden proceeds to upper secondary education ("gymnasium"). These three-year programmes either prepare for higher education (academic/theoretical programmes) or for the labour market (vocational programmes). The choice for a specific programme, including not enrolling in upper secondary education, is our dependent variable. We will include people in the ages 16-19, comparing native-born with Swedish-born parents with native-born with foreign-born parents. We will also compare analyses for young people with a European and a non-European migration background.

Our main independent variable is the segregation profile for the residential grid where young people are residing in the year 2022. We follow Fowler's (2016) research design in constructing segregation profiles for each of the residential grids in Stockholm county. For each grid, local environments, or individualized scalable neighbourhoods, are constructed at 11 distance-based scales, ranging from local scales including residents within 250 meters radius to those included at a distance of 5 km, recorded with 500 meters increment (Hong et al. 2014), using the seg package in R. Within each local environment, we apply weights based on a negative exponential function with a power of 2. Ethnic segregation profiles are calculated based on the distinction between people born in Sweden versus people born abroad, without distinguishing where parents are born. In a later stage, we may include different migrant groups.

We use the spatial information theory index $\widetilde{H}$, following for instance Fowler (2016), Lee et al. (2018) and Reardon et al. (2008). $\widetilde{H}$ has been found to be conceptually and mathematically superior to other spatial segregation measures (Lee et al. 2008; Reardon and O'Sullivan 2004). $\widetilde{H}$ measures how much less diverse individuals' local environments are, on average, than in the total population of the large unit (Reardon and O'Sullivan, 2004), in this case the Stockholm region. The index reaches a maximum value of 1 in the case of maximum segregation, or when each individual's local environment consists of members of just one group, and a value of 0 in the case of no segregation, or when each individual's local environment has exactly the same composition as that of the region as a whole. This global spatial segregation measure $\widetilde{H}$ can be further decomposed into $\widetilde{H}_p$ for each local environment centred around a location on the grid. This value measures how the level of segregation for the local environment compares to the average level of segregation for the region as a whole. Similar to $\widetilde{H}$, values which are closer to 1 indicate more segregation and those closer to 0 more integration. There can also be negative values, which should be interpreted as the local environment being more diverse than the region at large. In a final step, we cluster $\widetilde{H}_p$ to create a typology of segregation types using the segregation profiles of each local environment, following Fowler (2016). The values of $\widetilde{H}_p$ over scales are used to hard-code a segregation typology for local environments in the Stockholm region. We will then employ regression analyses with educational choice as the dependent variable, and the segregation profile as the main independent variable. Other relevant variables will be included as controls.

Preliminary findings

Figure 1 shows segregation values at local scales (250 metres) for each of the 9,000 egocentric local environments in Stockholm municipality in 2022, and Figure 2 shows the geographical distribution of these. Figure 1 shows how segregation varies over distances and the large variety in segregation profiles. Dark green values indicate local diversity, concentrated in the southwest and northwest of the city and dark purple values indicate local segregation, specific for areas with almost exclusively Swedish-born, such as Bromma. The most segregated or homogenous areas are therefore affluent neighbourhoods with few foreign-born residents.

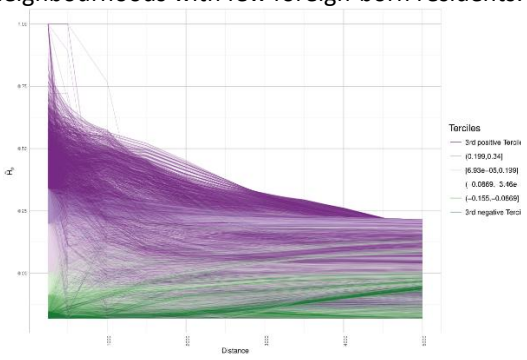

Figure 1. Segregation profiles coloured by terciles, Stockholm municipality, 2022

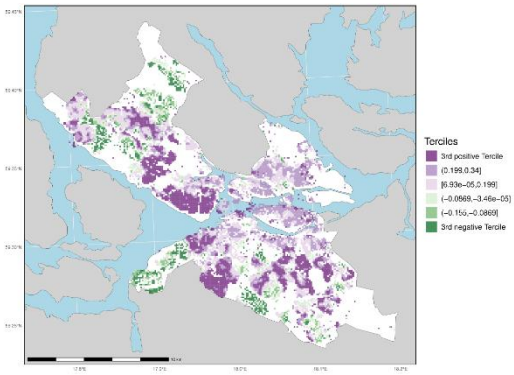

Figure 2. Map of the spatial information theory index $\widetilde{H}_p$ at 250 metres, Stockholm municipality, 2022

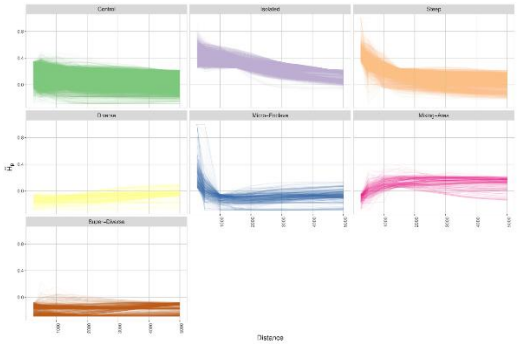

Figure 3. Segregation profiles by segregation types, Stockholm municipality, 2022

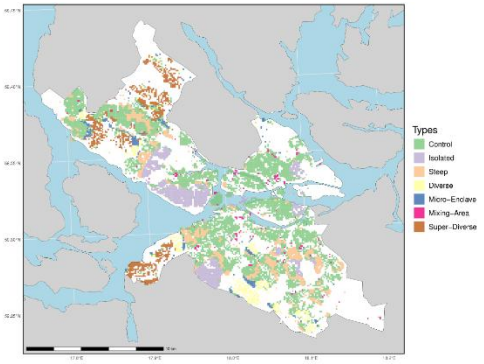

Figure 4. Distribution of segregation types across Stockholm municipality, 2022

Figures 3 and 4 show the results of clustering the segregation profiles into a typology of local environments for the Stockholm region. The clustering is based on initial values of segregation, the rate of change across distances and the size of the neighbourhood, following Fowler (2016). These are linked to theoretically interesting segregation cases and how they would be exemplified by segregation profiles. More than half of all local environments were identified as control-type areas, characterized by some segregation at small scales, but a rather quick tapering off over distance. Figure 3 shows the rather flat segregation profile over scales. Steep segregation areas have higher initial segregation followed by a significant drop with increasing distance. Many of these are located next to control or isolated areas. The latter have substantial segregation at small scales, and decreasing levels across scales, though not to very low levels. This is typical for native-only areas such as Bromma. Super-diverse areas display diversity at each scale – typical for areas in the northwest and southwest. Diverse areas have high levels of diversity at low scales but almost no segregation at larger distances, which, theoretically, would be more conducive for interaction across groups. Micro enclaves have relatively high segregation at small scales, followed by a drop to diverse areas and subsequently a tapering off with larger scales. They are few and scattered across the city without much clustering. Finally, mixed areas are diverse locally but less so at larger scales.

In a next step, we will include the whole of Stockholm county to construct similar segregation profiles. We will then map these profiles and use them as an independent variable in a regression analysis of upper secondary educational choice, and examine whether such profiles matter equally for youth with a migrant and a non-migrant background, and for those with a European versus a non-European background. We will also investigate how the location of the specific school that was chosen plays a role in these processes.

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