Life-course Trajectories of Experienced Segregation Across Multiple Domains

Research question and focus

While traditional segregation research has been compartmentalized, often focusing on specific domains such as schools, neighborhoods, or workplaces and typically analyzing macro-level trends or individual-level decisions specific to each domain, recent scholarship has emphasized the interdependencies between these domains (Cagney et al., 2020; Park and Kwan, 2018). Moreover, emerging insights from the recent neighborhood effects literature (Chetty and Hendren, 2018; Wodtke, 2013) as well as life-course understandings of segregation (Tammaru et al., 2021; van Ham et al., 2018) underscore the enduring impact of childhood circumstances on adulthood. Building on these recent insights, we aim in this study to investigate how various facets of segregation, including school segregation for children, neighborhood segregation, and parents' segregation in the workplace, collectively shape the life course trajectories of individuals. In doing so, we embark on a comprehensive understanding of the collective experience of socio-economic segregation among household members.

In recent years, scholars have leveraged new sources of data, such as GPS or mobile phone data, to describe mobility and segregation patterns at the individual level, focusing on all relevant places of interaction (so-called activity space) beyond the place of residence, (Alessandretti et al., 2018; Athey et al., 2020; Chong et al., 2020; Dong et al., 2020; Moro et al., 2021). Such data, however, tend to have scarce information about the individuals, such as their socio-economic background and family characteristics which are crucial for understanding segregation patterns and spatial inequalities (McAvay, 2018; Tammaru et al., 2021; van Ham et al., 2014). In this study, we use the rich microdata from Sweden between 1990 and 2017 to complement the standard residential segregation measures with school and workplace segregation and extend the more recent activity-space literature with information on exposure to poverty and affluence in multiple domains, what we call experienced segregation, for all household members of a given cohort over 27 years.

Theoretical background

We bridge two novel approaches to segregation that seek to extend the context from which segregation is measured. On the one hand, recent studies have moved beyond the place of residence and measured segregation in all socially relevant places, including the workplace, grocery shopping places, schools, etc. Results show that different domains of the activity space have their own segregation patterns, and that segregation cannot be reduced to only its residential component (Kwan, 2013; Park and Kwan, 2018). On the other hand, recent studies have investigated the transmission of contextual inequalities through peers, family, or institutions. These studies have emphasized the role of the intergenerational transmission of context in the pervasiveness of segregation and spatial inequalities (McAvay, 2018; van Ham et al., 2014)

Recently, the ‘vicious circle of segregation’ approach has united those two literatures by providing a theoretical framework for the reproduction of (activity space) segregation over the life course (Tammaru et al., 2021; van Ham et al., 2018). We supplement this framework by explicitly formulating the role of other household members (e.g., a parent, a sibling, or a partner) in shaping an individual’s segregation and life-course trajectory.

We rely on extensive literature on spillover effects and social influence. For instance, it has been shown that older siblings are instrumental in shaping the educational trajectories of younger siblings (Zang et al., 2023). Similarly, we hypothesize that household members’ spatial

context in different domains also plays a role in an individual segregation trajectory, through, e.g., contagion and network effects (Centola and Macy, 2007; Goldberg and Stein, 2018), social capital (Bourdieu, 2007; Coleman, 1988) or by shaping one's spatial opportunity structure (Galster and Sharkey, 2017).

Data and methods

We use Swedish full population individual data to collect information about one class cohort (9^{th} graders in 1990, n = 109,406) and their household members (n = 614,692) over the life course, with annual data over 27 years. We use the information on their classmates, colleagues, and neighbors, provided at the individual level, to capture exposure to poverty and affluence for the class cohort and all of their household members (parents or care providers, siblings, partners) at compulsory school, high school, university, workplace and in the neighborhood each year. We capture exposure to poverty and affluence by computing the share of classmates, colleagues, or neighbors in the top or bottom 20% of the income distribution in a given year. This way, we create both individual exposure measures in each domain where ego is located (school, workplace, etc.) and household-level exposure measures to account for the spillover effects.

We build the trajectories of experienced segregation of more than 100,000 individuals, i.e. our baseline cohort of 9^{th} graders in 1990, as well as their time-varying household members over the 27 years, providing an unprecedented account of the diversity of contextual trajectories. We then create sequences of exposure indices at the individual and household levels and use sequence analysis to describe and visualize the trajectories.

Results

A comparison of individual and household exposure measures shows a moderate correlation between both variables (around .6 for both top and bottom exposure). This first result provides early evidence of variation between individual and household exposures to affluence and poverty, and could partly explain variation in spatial, educational, or labor market outcomes.

Figure 1 provides early results of correlations of exposure to affluence (right panel) or poverty (left panel) for different domains of activity. In Figure 1A, correlations are computed from the yearly measures of exposure, at the individual level. In Figure 1B, correlations are computed from aggregated measures of exposure over the life course, but still at the individual level.

These results already indicate the diversity of segregation patterns between different domains of activity. Overall, correlations are lower for exposure to poverty than for exposure to affluence, which corroborates with findings on residential segregation showing that high-income households are more segregated than low-SES households. Comparing locations of exposure, the workplace is consistently uncorrelated with other locations of exposure. Exposure in the neighborhood is strongly positively correlated with exposure at compulsory school, high school, and university, and we observe a downward trend in correlation from early years of education (compulsory school) to university. The bottom panel allows us to compare values of exposure across years – for instance, between exposure in high school with exposure in compulsory school. We find strong correlations in exposure to affluence for educational locations and the place of residence (e.g., 0.66 between high school and primary (compulsory) school), but much lower correlations for exposure to poverty (0.18 for the same locations).

Besides these promising early results, we will conduct a sequence analysis to capture the life-course exposure trajectories of the cohort. We will compare exposure trajectories among low-

versus high-income individuals. We suspect that individuals with high-income backgrounds are more likely to be exposed to affluence and that individuals with low-income backgrounds are more likely to be exposed to poverty. Given the early results and the past literature, we also hypothesize that high-income individuals are more likely to experience immobility of exposure trajectories. In other words, the reproduction of exposure to affluence should be higher for individuals with high-income backgrounds.

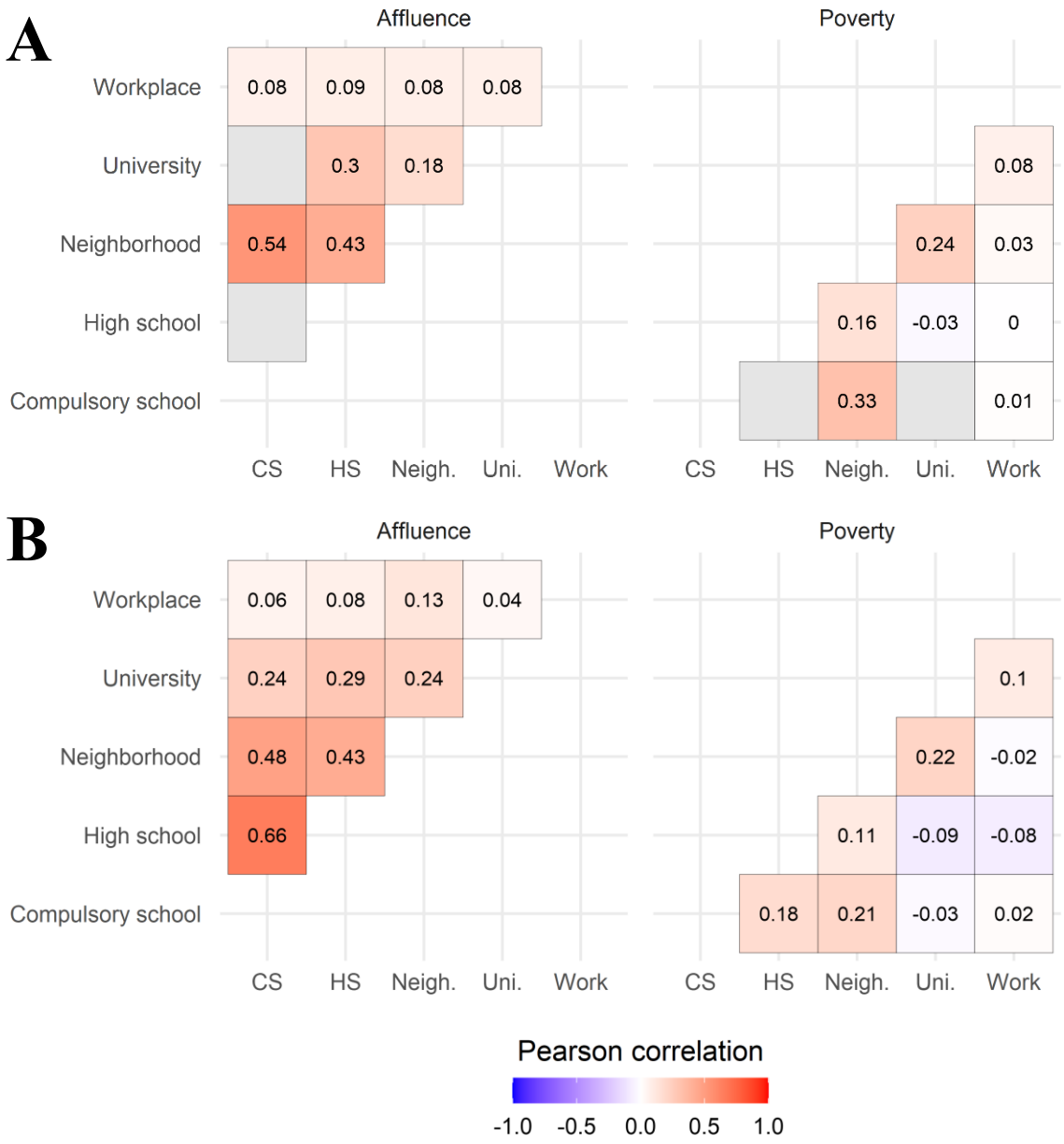

Figure 1. Measures of correlation for exposure to affluence (left panel) or poverty (right panel) between different domains of activity (workplace, university, neighborhood, high school, and compulsory education). In Panel A (top), correlations are based on yearly values of exposure. In Panel B, measures of exposure are aggregated over the life course and used to compute the correlation measures. Variables for which no correlation measures can be computed are in gray. Example: In Figure 1A, left panel, the top-right figure can be read as such: For individuals being both registered to a workplace and a university in a given year, the correlation in exposure to affluence between those two locations is 0.08.

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