Residential Trajectories of Immigrants and their Descendants in the UK

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Introduction

As the number of immigrants and their descendants has increased in Europe the literature investigating internal migration and residential patterns of immigrants and their descendants has grown. Most of this research is driven by a spatial assimilation perspective, which argues that over time we should expect to see increasing similarity of immigrants and their descendants to the native population (with two native-born parents) (Massey and Denton, 1985; Ellis et al. 2006; Vogiazides and Chihaya, 2019; Hermansen et al. 2022). Their residential trajectories, therefore, are also expected to grow more similar to those of the native population. The aim of this study is to investigate the internal migration patterns of immigrants and their descendants in the United Kingdom and to calculate the time they spend in various locations at different stages of their lives. From a methodological perspective, this will be accomplished through the use of multistate modeling.

The subfield of multiregional demography developed as an expansion of traditional demographic methods allowing for a focus on multiple populations simultaneously (Rogers, 1968). Following these works, Ledent (1980) developed a multiregional life table using internal migration data from the United States. Similar methods gave rise to broader multistate modeling which are well summarized by Andersen and Keiding (2002). More recently, the application of multistate/multiregional methods in a spatial context has been centered on population forecasting (Raymer et al., 2012; Wiśniowski and Raymer, 2025).

This study, by contrast, will focus on how this framework can be used to decompose internal migration flows. There is only one recent work taking a similar approach (Buonomo et al., 2024), and this will be the first study to use multistate modeling to study primarily immigrants rather than the native population of a country. By calculating the rate at which people move between different settlement types and locations, we expect to find variations in both levels of mobility as well as settlement patterns between diverse immigrant groups and natives in the UK. This novel approach takes advantage of the natural strengths of the multistate modeling to deliver fresh insight into the residential trajectories of immigrants in the UK.

Data

This study will utilize data from the UK Household Longitudinal Study (UKHLS). The UKHLS began in 2009 with approximately 40,000 households that were recruited to create a representative sample of the general population. From this sample, our study will follow individuals from when they enter the survey until they reach the age of 50. Limiting our sample to those under the age of 50 allows us to largely sidestep any issues around mortality without hampering our study as residential mobility declines significantly as individuals age.

There are a number of advantages to using this particular survey for our study. Firstly, this survey includes ethnic minority boost samples, ensuring sufficient sample sizes to perform detailed analysis related to these groups. Secondly, UKHLS follows multiple generations of the same families; this allows us to compare not just first-generation immigrants but second generation and the so-called 1.5 generation (those who were born abroad but moved to the UK at a young age) to the native population. Furthermore, there is potential to look at how outcomes are impacted by events in the life courses of multiple generations of a family, though that may be beyond the scope of this particular study. Lastly, the UKHLS offers relatively fine geographical units with which we can work. Currently, we expect to perform the analysis with data from the Local Authority level; however, further work is being done to determine the most appropriate geographical unit to utilize for this analysis and to determine if it will be feasible to include Scotland and Northern Ireland in the analysis.

Methods

The primary methodological approach that will be utilized in this study is multistate modeling. Multistate modeling is ideal for this study because of its ability to handle repeated events in a competing risks environment while allowing for reversible transitions where individuals may return to a state they previously inhabited.

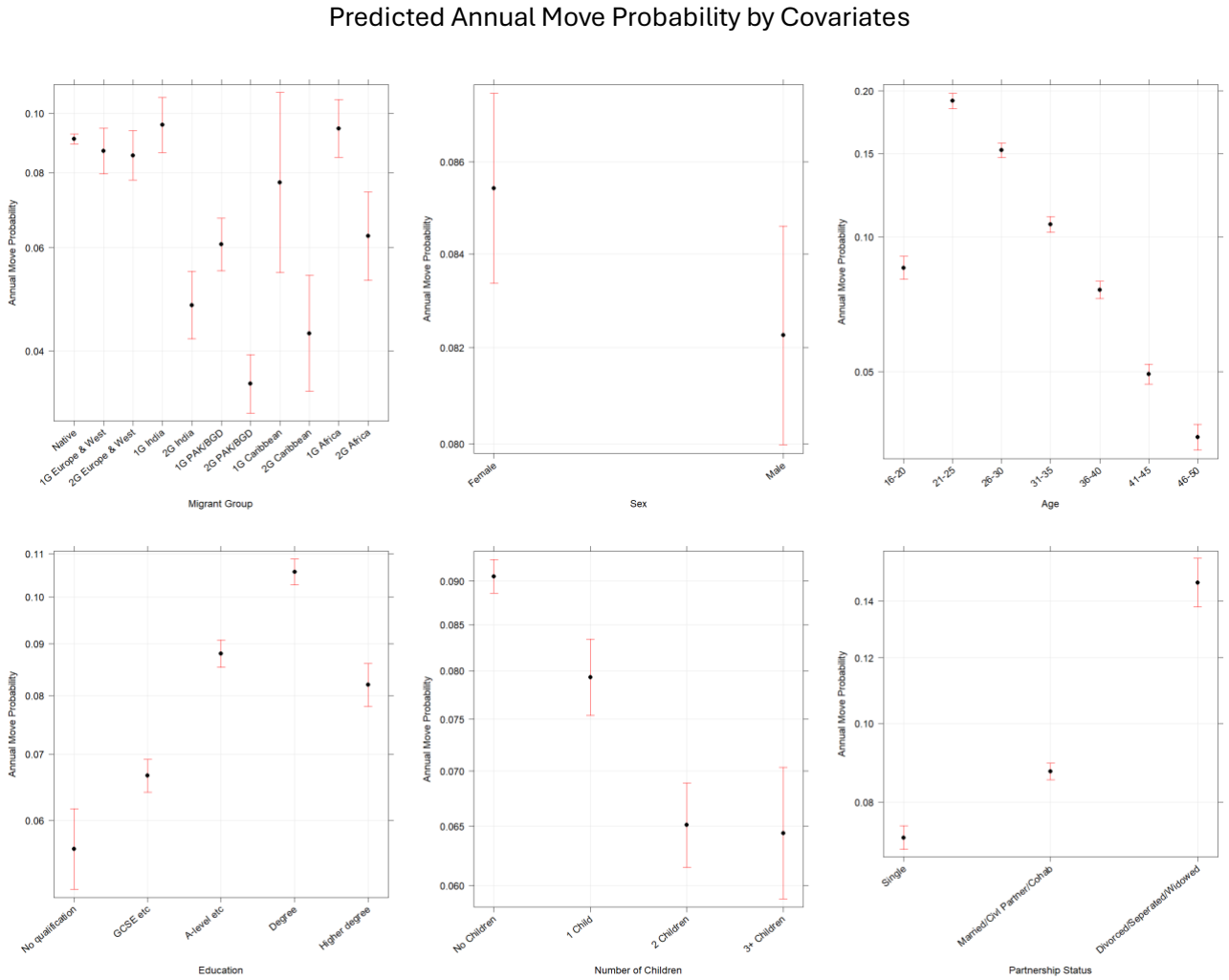
Multistate modeling is quite popular in health sciences where one can model how individuals progress through various stages of a disease (Le-Rademacher et al., 2022). Though less common, multistate modeling is occasionally used by labor market economists looking at unemployment (Prowse, 2005; Pedersen et al. 2012). Multistate modeling can also be found in demography when researchers examine how individuals' partnership statuses change throughout their lives or investigate childbearing patterns (Willekens et al., 1982; Cook et al., 2022; Kulu et al., 2023). It is far less common to see multistate modeling used with respect to individuals' geographic locations.

We will first define our states, then estimate the rate at which individuals transition between those states, and lastly, use those rates of transition to estimate the time we can expect individuals to spend in those states. Our initial point of inquiry is centered on understanding where immigrants and their descendants live within the UK at various stages of their lives. As a byproduct of estimating the expected time individuals will spend in different areas of the country, we will also see the relative levels of mobility between different groups. Due to the flexibility afforded by the use of multistate modeling, we are able to define states in terms of both geographical locations as well as other characteristics of potential interest. These could include factors such as socioeconomic markers as well as urban rural classifications.

Expected Findings

We expect to find that immigrants are broadly spending much of their time living in a few main locations: the greater Londan area, Birmingham and northern cities such as Manchester. While those findings would not be groundbreaking on their own, we intend on digging deeper by examining differences across groups as well as variation within groups at different life stages. Additionally, we are interested in identifying internal migration

flows between these major hubs. As a byproduct of estimating the time individuals will spend in different areas of the country, we will also see the relative levels of mobility between different groups.



An initial analysis of our data (summarized in the charts above) has been performed using logistic and multinomial regression on UKHLS Waves 1-9 including 194,084 observations of 38,896 individuals. This analysis has shown heterogeneity in residential mobility between both migrant groups and migrant generations. Additionally, we see the effects of children and aging (generally negative) and the impacts of education (generally positive) on residential mobility.

When we further break this down, we see that there are differences between migrant groups in their propensities to make short versus long distance moves within the UK. Our initial analysis has also indicated that there is further heterogeneity across the country geographically in both the origins and destinations of individuals' moves. Of particular interest to this study, we have also seen that second generation migrants tend to have lower mobility than both their parents and the native-born population.

The lower mobility of the second generation in Europe is well established, though the reasons for this lower mobility are far less clear (Torpan et al., 2024). The use of multistate modeling will allow this study to contribute to the literature by further decomposing the effects leading to different levels of mobility and allow us to calculate counterfactuals, where we will be able to, for example, estimate how the mobility of a given group

would change if they instead had the educational characteristics or the childbearing patterns of another group. These sorts of calculations are of potential interest as they can help us better understand the nature of this lower mobility. Additionally, there is evidence that the causes for short-distance relocations are often different than those of long-distance moves (Mulder and Hooimeijer, 1999). For example, someone who repeatedly moves within the same geographical area may be experiencing some level of housing instability, whereas another individual moving over longer distances may be more likely to be pursuing career opportunities. These differences as well as the nature of the destination of a move are of potential interest as we look to tease apart what is driving divergent residential trajectories.

Next Steps

The initial analysis of our data has laid out the general patterns affecting internal migration within the UK. From here we will work to define states in such a way to gain new insights into the residential trajectories of individuals in the UK. The most natural states to define are those related to geography, and we will likely begin there. These states would be defined by what region they are in or perhaps by measures of urbanicity. A potential example in this vein would be an extension of rural urban classifications by defining three states as follows: London, all other cities, and rural areas. Another potential line of inquiry could lead to states defined in part by measures of deprivation, allowing for research into potential stratification in living conditions amongst different groups.

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