The role of age in shaping neighbourhood ethnic diversity

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Short abstract

Growing numbers of neighbourhoods in England and Wales are home to a substantial mix of people from different ethnic groups. White dominated neighourhoods, the most common neighbourhood type, are steadily transitioning into areas with higher – and stable – levels of ethnic diversity. Little attention has been paid to the relationships between neighbourhood transitions and from the age profiles of their residents. Concentrating on White spaces, which are undergoing important shifts in their composition, we aim to understand how their changing age structures fuel neighbourhood transitions. We use Lower Layer Super Output level Census data for 2001, 2011 and 2021, and explore the age profiles of different ethnic groups within low-diversity White and moderate-diversity White neighbourhoods. We define these spaces using a schema that accounts for diversity *and* group dominance. Preliminary results found the White population residing in moderate- and high- diversity neighbourhoods tend to have younger age profiles, compared to low-diversity neighbourhoods. While all neighbourhood types aged, with an increasing proportion of older adults, low-diversity neighbourhoods remain relatively older. In addition, White dominated neighbourhoods that transitioned into more ethnically diverse areas between 2011 and 2021 had younger age profiles in 2011, when compared to White dominated neighbourhoods that did not become more ethnically diverse. Overall, these findings suggest that the changing proportion of younger White groups, such as young adults, may have some influence on the increase and spread of ethnic diversity across neighbourhoods in England and Wales.

Extended abstract

1. Introduction

Residential neighbourhoods across England and Wales have become increasingly ethnically diverse, and that diversity has been spatially diffusing to new, less urban, locales (Catney et al., 2023). Once neighbourhoods transition into high diversity, they tend to stay that way; high-diversity neighbourhoods are remarkably stable in England and Wales, in contrast to the US (Catney et al., 2021; Wright et al., 2020). The most important source of this new and stable diversity in England and Wales is formerly White dominated neighbourhoods. These spaces are transforming: while White majority neighbourhoods remain the most common neighbourhood type, they have been steadily shifting towards greater ethnic diversity. The focus of this paper is, therefore, on these White dominated neighbourhoods.

One important factor that may contribute to changes in ethnic diversity across neighbourhoods is the age composition of its residents. Age can represent the stage of one's life course (Sabater et al., 2017) and is also a *driver of residential sorting* (Sabater and Finney, 2023). Despite this, there is much to be learnt about the dynamics between age structure, ageing and the neighbourhood ethnic diversity. The literature on neighbourhood transitions has paid little attention to the demographic processes behind such shifts, focusing instead on the role of individuals, within ethnic/racial groups, in altering the ethnic composition of their residential spaces. In this paper, we deconstruct ethnic groups and focus on their age profiles. Is greater ethnic diversity associated with younger neighbourhood compositions? How does the balance of age profiles relate to the ethnic diversification of White dominated spaces? Are neighbourhood transitions fueled by the changing age structure of the ethnic groups that live in these shifting spaces?

We explore these questions using age and ethnic group information at Lower Layer Super Output Areas (LSOA) level for three census years – 2001, 2011 and 2021. The research presented is part of a wider ESRC funded project *Geographies of Ethnic Diversity and Inequalities (GEDI)*[1].

2. Research context

The UK has had a long history with immigration: from the post-war immigration of people arriving from the Caribbean from the late-1940s to the immigration flows from 2004 due to the EU enlargement (Simpson and Jivraj, 2015). In 2021, nearly 17% of the population of England and Wales is foreign-born, meaning one in six usual residents were born outside the UK (ONS, 2022). While immigrants in general tend to be younger on average, the UK's history of immigration, colonialism and demographic change contribute to the variation in the age composition between ethnic groups residing in the country and across smaller geographical scales. With the exception of the long-established White Irish group, minority ethnic groups are younger on average (Simpson and Jivraj, 2015; ONS, 2023).

Studies of the UK have found that younger and older people are becoming increasingly likely to live apart (Sabater et al., 2017; Sabater and Finney, 2023). In particular, age segregation has been growing in urban areas but is most prominent in less urban areas. While this could partially be explained by differences in housing affordability across areas (Sabater and Finney, 2023), demographic factors that could influence the neighbourhood composition, such as ethnicity, stage in the life course, and the interaction between them, requires further investigation.

One of the few studies in the UK which examined residential segregation and focused on the role of ethnic group and age cohorts is by Sabater (2010). Using mid-year Census-based estimates for 1991 and 2001, Sabater showed non-White ethnic groups to be more segregated across all age cohorts relative to their White counterparts. He also found residential segregation varied based on life stage, with the greatest segregation in middle adulthood. This result was consistent across ethnic groups. Sabater and Catney (2019) found similar results for 2001 and 2011 using Census-based estimates and standard Census

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[1] www.gedi.ac.uk

data, respectively: residential segregation is age-specific. Specifically, they found segregation decreased during young adulthood and increased from one's late-20s until retirement.

In a study of the US, the highest disparities of racial-ethnic segregation were found among older adults residing in urban counties. They found that higher age segregation in urban areas mostly involved Whites, and higher segregation in rural counties mostly involved non-White ethnic groups. Relative to other groups, non-White older adults residing in rural areas were more likely to experience higher levels of age segregation.

Important questions remain around the role of age in producing neighbourhood transitions. The literature on suburbanization points to younger adults leaving the inner city with their growing families, and counterurbanisation is associated with the in-migration of people at the family-building or retirement life course stages (Champion, 2005). Gentrification, too, has an age dimension, most often associated with younger adults (Smith, 2005). This paper does not analytically focus on internal migration processes, but with changing demographic profiles in neighbourhoods (which might be associated with migration and also with in situ ageing, births and deaths). We consider if the changing geographies of ethnic diversity observed in England and Wales are associated with their age-ethnic profiles. We focus specifically on White dominated neighbourhoods since these have experienced fundamental shifts in their number, location and composition.

Catney et al. (2021) employed a neighbourhood schema to capture, concurrently, ethnic group dominance and diversity for consecutive Census periods 1991-2001-2011. While the focus was on high-diversity neighbourhoods, their analysis revealed interesting transitions for White spaces. Low-diversity White neighbourhoods constituted more than 90% of all neighbourhoods in England and Wales in 1991; this had decreased to 78% by 2011. Most of the transitions from former White segregation was towards moderate levels of ethnic diversity, still with a White majority. In turn, these moderate-diversity White neighbourhoods grew, from 8 to 16% between 1991 and 2011. At the same time, moderate-diversity White neighbourhoods transitioned into high-diversity; 857 of the 913 new multi-ethnic neighbourhoods in 2011 were moderate-diversity White in 2001. They showed that these transitioning neighbourhoods had smaller White populations in 2001 – 55% of their populations were White, compared to 65% of all 2001 moderate-diversity White neighbourhoods. What is the association between the ageing of the White British population, which dominates low-diversity White neighbourooods, and new forms of diversity in White spaces (see Kye and Halpern-Manners for an allied US study, 2023)?

3. Data and Methods

Age groups: We use five-year age groups from 0 to 85+ for 2001, 2011 and 2021.

Ethnic groups: Minority ethnic group categories in the UK Census capture various sub-populations: those with origins in immigration, and their UK-born descendants. Ethnic group categories differ between each census year; along with the majority White British group, there were 16 ethnic groups in 2001, 18 in 2011, and 19 in 2021. To create neighbourhood types which are comparable across time, we aggregated them all into eight groups: White, Indian, Pakistani, Bangladeshi, Chinese, Black African, Black Caribbean and Other (see Catney, 2016; Simpson et al., 2016). We use Census-based population estimates for 2001 (see Sabater and Simpson, 2009) and Census data for 2011 and 2021.

Geographical scale: Our analysis is for Lower Layer Super Output Areas (LSOAs)[2], which we term neighbourhoods. LSOAs are a statistical geography that are built up from clusters of around four to six Output Areas (OAs). OAs are small areas which have comparable population sizes and tend to be socially

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[2] We are able to use LSOAs for 2011 and 2021, however, we must harmonise OAs to LSOAs in 2001 since the only data available for detailed age groups and ethnic groups is for OAs. This is done using a lookup table provided by the ONS (available here: https://geoportal.statistics.gov.uk/datasets/ons::output-area-to-lower-layer-super-output-area-to-middle-layer-super-output-area-december-2001-lookup-in-england-and-wales-1/explore).

homogenous. In 2021, there were 35,672 LSOAs, with a mean population of 1,671 people. We use consistent geographies for England and Wales for 2001, 2011, and 2021 (see Catney et al., 2023).

Neighbourhood typologies: Neighbourhood typologies are created using the mixed metro schema from the work of Holloway et al. (2012) for the US. To account for differences in the race/ethnicity group classifications between the US and UK, Catney et al. (2021) adjusted Holloway et al.'s six-group entropy-based schema into one for eight groups. The eight-group neighbourhood entropy (see Catney et al., 2021 for methodology) is used to identify three types of diversity: low, moderate, and high. For low- and moderate- diversity neighbourhoods, the neighbourhood's largest group is also identified – example neighbourhood types include "low-diversity White" and "moderate-diversity Bangladeshi".

4. Preliminary results

This study firstly updates the neighbourhood typology developed by Holloway et al. (2012) and adapted to the British context by Catney et al. (2021) using the 2021 Census of England and Wales. Table 1 presents the number and percentage of neighbourhoods in each typology by census year. The most common neighbourhood type by far is low-diversity White. The proportion of this neighbourhood type has steadily declined over time, while most other neighbourhood types have observed an increase – for example, moderate-diversity White and multi-ethnic neighbourhoods. As with previous years (Catney et al., 2021), White spaces became increasingly more ethnically diverse between 2011 and 2021.

	2001 (N)	2011 (N)	2021 (N)	2001 (%)	2011 (%)	2021 (%)
Low-diversity White	30,907	28,154	25,488	86.64	78.92	71.45
Moderate-diversity White	3,824	5,537	7,608	10.72	15.52	21.33
Multi-ethnic	575	1,515	1,931	1.61	4.25	5.41
Low-diversity Indian	8	9	14	0.02	0.03	0.04
Moderate-diversity Indian	148	159	204	0.41	0.45	0.57
Low-diversity Pakistani	2	6	6	0.01	0.02	0.02
Moderate-diversity Pakistani	158	228	326	0.44	0.64	0.91
Low-diversity Bangladeshi	2	2	1	0.01	0.01	0.00
Moderate-diversity Bangladeshi	45	50	68	0.13	0.14	0.19
Moderate-diversity Black African	45	3	12	0.01	0.01	0.03
Moderate-diversity Other	n/a	9	14	n/a	0.03	0.04
Total	35,672	35,672	35,672	100.00	100.00	100.00

TABLE 1 Neighbourhood typologies in England and Wales for 2001, 2011 and 2021

Each plot in Figure 1 shows the average age structures of the White population in England and Wales who reside in a given neighbourhood type (left) or reside in all other neighbourhoods (right) for each Census year. As an example, plot A shows the 2001 age structure for the White population living in WhLD (yellow) compared to all other neighbourhoods (grey). The age profiles of the neighbourhood types are distinctive, particularly comparing WhLD with WhMD and HD. WhLD have a relatively older age structure compared to the other two areas and are ageing over the three census years – suggesting that White residents are ageing in place. The age profiles for WhMD and HD indicate that the White population living in neighbourhoods with higher ethnic diversity tend to be younger. WhMD have notable proportions of young adults (20s and 30s) and those in mid-adulthood (40s to mid-60s), while HD have the youngest age profiles of the three types, with noticeable youth and young adult populations. The age distribution for WhMD and HD appear consistent across the two decades. They are consistently relatively more youthful than WhLD neighbourhoods, but are also ageing, as indicated by their increasing proportion of older adults. These findings sketch the relationships between age, ageing and neighbourhood diversity, which will be explored in more detail in the full paper.
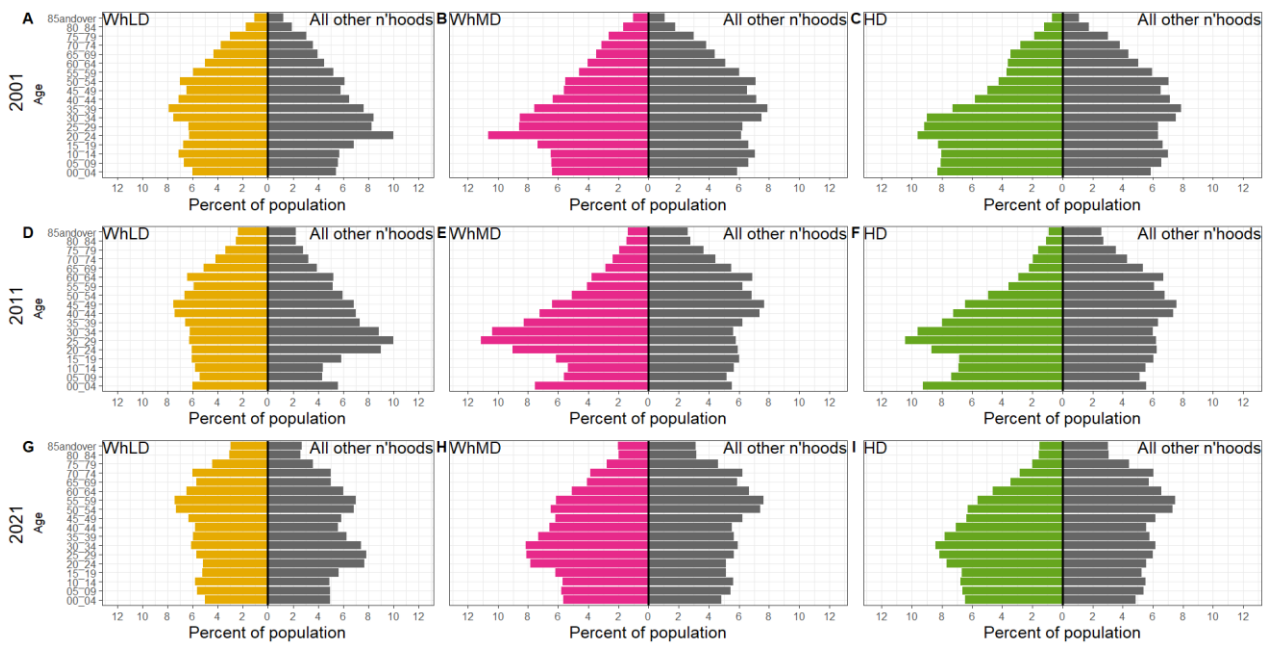
FIGURE 1 Age profiles of the White population (White British, White Irish, and Other White groups) by census year and neighbourhood type: (A) 2001: WhLD, (B) 2001: WhMD, (C) 2001: HD, (D) 2011: WhLD, (E) 2011: WhMD, (F) 2011: HD, (G) 2021: WhLD, (H) 2021: WhMD, (I) 2021: HD. *Notes*: Neighbourhood types: WhLD = Low-diversity White, WhMD = Moderate-diversity White, HD = multi-ethnic (high-diversity).
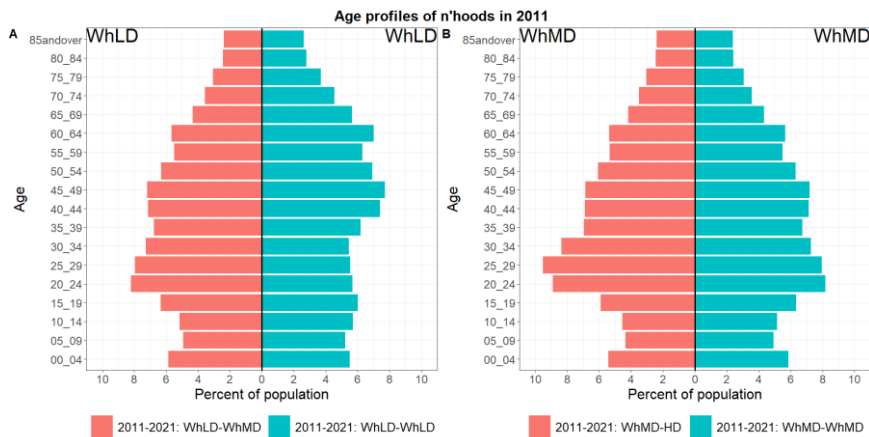

FIGURE 2 Average age profiles of the White population in 2011 based on their neighbourhood transition (or lack thereof) between 2011 and 2021: (A) WhLD-WhMD (N=2708, 7.6%) and WhLD-WhLD (N=25445, 71.3%) (B) WhMD-HD (N=597, 1.7%) and WhMD-WhMD (N=4785, 13.4%).

Apart from exploring the age profiles of neighbourhood types by ethnic group and census years, we are also interested in understanding the age profiles of transitioning neighbourhoods. Figure 2 presents the age profiles of the White population residing in certain neighbourhoods in 2011. These pyramids tell us what may be distinctive about White spaces that shifted towards higher diversity when compared to White spaces that did not change. Plot A shows the average age profiles for two types of WhLD areas in 2011: WhLD that became more ethnically diverse and transitioned to WhMD in 2021 (pink) and WhLD that remained WhLD in 2021 (blue). Similarly, but for WhMD, plot B shows the average age profiles for two types of WhMD areas in 2011: WhMD that transitioned to HD in 2021 (pink) and WhMD that remained WhMD in 2021 (blue). In general, neighbourhoods that transition to areas with higher ethnic diversity have younger age profiles in 2011. For WhMD, we observe a larger peak of young adults for WhMD areas that transitioned to HD compared to those that did not. These preliminary results suggest the proportion of younger White groups in neighbourhoods may have some influence on the increase and spread of ethnic diversity across neighbourhoods in England and Wales.

5. Next steps

By the time of presentation, we plan to develop this study in several ways:

- We will explore age*ethnic group profiles for White groups disaggregated and other groups, as well as analyse age*ethnic group profiles of transitioning neighbourhoods in more detail.
- Using 2021 data, we expand upon the neighbourhood typologies by disaggregating the broader White ethnic category to consider the White British and Other White ethnic groups separately (e/g/. White British low diversity). We do this for two main reasons: (i) the increasing complexity of White spaces calls for their deconstruction into areas dominated by the majority White British population (74.4% of the England and Wales total) and those with relatively recent origins in immigration; (ii) the distinctiveness of the age profiles of these ethnic groups.
- We will further explore the household composition of White dominated neighbourhoods by ethnic groups. Focusing on household composition can tell us *who* lives in what type of neighbourhood and allows us to consider stages in the life course (e.g., young families with dependent children living in the suburbs or older retirees living alone in coastal areas). This addition may be able to provide insights on the processes that drive the observed increase and spread of ethnic diversity.

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