REGULAR PAPER

Ethnic internal migration: The importance of age and migrant status

Frances Darlington-Pollock[1] iD | **Nik Lomax[2]** iD | **Paul Norman[2]** iD

[1]Department of Geography & Planning, University of Liverpool, Liverpool, UK

[2]School of Geography, University of Leeds, Leeds, UK

Correspondence
Frances Darlington-Pollock
Email: f.darlington-pollock@liverpool.ac.uk

Internal migration is one of the main drivers of local population change and therefore an important factor to consider in the provision of services across key domains such as housing, health and education. In recent years, the population of England and Wales has become increasingly ethnically diverse, with groups varying in age structure and time spent in the UK (whether at the group or individual level). However, relatively little is known about the internal migration patterns of these diverse groups, with research into internal migration propensity not accounting for the possible interplay between ethnicity, country of birth and age. Using micro-data from the 2011 Census for England and Wales, this paper addresses this gap in knowledge, exploring whether widely reported determinants of internal migration operate differently for different ethnic groups, stratified by age and country of birth. This paper also explores whether for ethnic minority groups born overseas, time spent in the UK matters for migration propensity. When stratifying ethnic groups by age and country of birth, differences in migration propensity do not appear to be explained by socio-economic differences, as previous research in the field suggests. However, for those born overseas, some of the differences are explained by time spent in the UK. From a policy perspective, it is evident that a more nuanced understanding of the way in which propensity to migrate may vary between ethnic groups differing in age and country of birth is needed to ensure sustained provision and equitable access across key service domains. Further research must examine the extent to which differences in migration propensity shapes the nature of migration events, whether in terms of distance or frequency of move.

KEYWORDS
Census, country of birth, England and Wales, ethnicity, internal migration, logistic regression

1 | INTRODUCTION

The size, concentration and spatial distribution of ethnic group populations across the UK increasingly permeates academic debate, policy agendas and media headlines. Essential to these discussions on the changing geography of ethnicity is an understanding of the extent to which internal migration patterns can be differentiated by ethnic group. While once a neglected area of study, the release of 2001 Census data heralded growing academic interest in ethnic internal migration

(e.g., Catney & Simpson, 2010; Champion, 2005; Finney & Simpson, 2008) However, gaps in knowledge remain. Despite the increasing ethnic diversity of England and Wales (Rees et al., 2016) there is a paucity of research considering the inter-action between internal and international migration (King & Skeldon, 2010). Although the importance of age as a determi-nant of internal migration is well established, little is known about the implications of, or interplay between, age, ethnicity and country of birth in relatively youthful minority ethnic populations.

Theoretically, such gaps are important insofar as they preclude our ability to capture the likely mobility patterns of eth-nically differentiated populations when forecasting or projecting population change. Understanding the likely mobility pat-terns of a given population can inform discussion across multiple policy domains. For example, where migration results in changes in both size and composition of local populations, this has "consequences for the labour supply and the need for housing" (Champion, 2005, p. 92). Population movement has implications for service planning, raising issues regarding the continuity of provision across key domains (Beatty et al., 2009). Insufficient attention to the ethnic composition of migra-tion complicates efforts to ensure equality of access across these key domains (Rees et al., 2012). This is compounded by ambiguity over whether and how country of birth may interact with ethnically differentiated patterns of internal migration. More broadly, insofar as ethnic internal migration matters for residential segregation or dispersal, closing gaps in knowl-edge can inform debates on integration, and social and community cohesion.

We therefore investigate the impact of the relationship between ethnicity, country of birth, and age on migration propen-sity in England and Wales. Using cross-sectional, individual level data from the 2011 Census, we address two questions:

1. Do determinants or drivers of migration vary between ethnic groups differentiated by country of birth, age and dis-tance moved?
2. For foreign-born groups, how does length of time in the UK effect propensity to migrate?

Answering these questions will provide insight into important processes which act to redistribute the population which have so far been overlooked. While the data used preclude a detailed look at the geography of ethnic internal migration, we exploit information on the distance moved to emphasise the spatiality of ethnic internal migration. In the context of wider persistent socio-economic inequalities among ethnic groups and debates regarding segregation and integration, the spatiality of ethnic internal migration is pertinent. Longer distance moves are more often associated with (increasing) pros-perity: where differences in propensity to migrate across longer distances are observed among ethnic groups (differentiated by age, country of birth and time spent in the UK), questions arise about the equity of the opportunities available within the population. Conversely, local rootedness (whether through immobility or a tendency for shorter distance moves) is posi-tively associated with community cohesion and social capital. It is therefore a critical consideration in respect of ethnic resi-dential segregation. Although Champion and Shuttleworth (2017) reflect on these differences in terms of the positive or negative connotations of changes in rates of internal migration, there is a need to consider these in the context of ethnic internal migration.

2 | REVIEW

While ethnic minorities tend to be highly mobile at the aggregate level, Lomax and Rees (2015) reveal clear differences in migration propensities between ethnic groups: Indian, Pakistani and Black Caribbean populations are less mobile than the White majority. This is consistent with earlier work by Finney and Simpson (2008) who found Chinese and Other groups to be the most mobile. Settlement patterns and subsequent internal migration trajectories are shaped by the initial reason for migration to the UK. Contrast, for example, Chinese–UK migration driven by entry into the higher education sector (HESA, 2017) with the experience of European Union (EU) A8 countries (e.g., Poland, Slovakia) and their concentrated entry into manufacturing, construction, and wholesale and retail trade industries (ONS, 2017). The resources, social capital, and geography of the available opportunities (whether university places or employment) are pertinent, governing where migrant groups settle and therefore the opportunities available to them for onwards, upwards socio-spatial mobility (Catney & Simpson, 2010). It is important to note that the mobility of different ethnic groups in the UK has changed over time in relation to their positioning in housing and labour markets (Darlington-Pollock & Norman, 2017; Finney, 2011; Finney & Simpson, 2008), demonstrating a need to differentiate by length of time spent in the country.

The association between key life events and migration decisions varies between countries (Bernard et al., 2014), related to differences in opportunity structures (e.g., housing and labour markets; Mulder & Hooimeijer, 1999), social policy (e.g., welfare provision), or the spatial layout of a country (Mulder et al., 2002). Cultural norms in society also shape migration

patterns and their association with life events: for example, pathways out of the family home will vary, depending on prevailing attitudes to co-habitation, marriage or independent living. Differences in exposure to cultural norms, whether between ethnic groups, or within ethnic groups depending on country of birth, may therefore influence propensity to migrate in contrasting ways. Differences in experience of characteristics known to influence propensity to migrate between ethnic groups will then matter for patterns of internal migration.

Observed differences in patterns of internal migration within ethnic groups may be attributable to different learned behaviours shaping decisions to leave the family home (Finney, 2011; Stillwell & Hussain, 2010). The influence of cultural heritage and learned behaviours on internal migration patterns may also transcend geographic boundaries, being retained and transmitted between successive generations of migrants settled in new countries. Long-term shifts in cultural attitudes within a society may also give rise to cohort or period effects on subnational migration patterns, operating differently for different ethnic groups. For example, Clark (2013) explores how inequalities in housing wealth between racial groups, among others, stemmed from a growing preference for homeownership in America. It is therefore pertinent to examine whether internal migration propensities vary within ethnic groups by country of birth status (e.g., born in the UK, or foreign born).

Aside from ethnicity, migration is selective on a wide range of characteristics, including age (arguably the most important), sex, health, education, social class, tenure and marital status. Where inequalities in health, education, class or tenure are observed between ethnic groups, this will impact on the nature of available opportunities for migration, or the lack thereof. Finney and Simpson (2008) demonstrate that the characteristics distinguishing movers within the population (e.g., health, education and class) are comparable between ethnic groups. It is argued that differences in rates of internal migration between ethnic groups arise because of differences in their socio-economic composition and age profile. However, this was not the case for differences in distance moved and this research did not differentiate within ethnic groups depending on their country of birth.

The relationship between internal migration and international migration is complex. There is evidence that one drives increases in the other (Green, 2018, p. 42; Lomax & Stillwell, 2018), and that areas gaining international migrants lose internal migrants (Lomax et al., 2013). While international migration may influence internal migration through additional pressure on housing and labour markets (Stillwell et al., 2018), it is not clear whether such effects diminish over time as international migrants settle and assimilate with the host population. Age further complicates this. Differences in age structure both relative to the White British (Lievesley, 2010) and between, for example, more recent EU migrants compared with more established Commonwealth migrants may modify the relationship between ethnicity and propensity to migrate. For example, reported differences in the experience of life events as triggers for migration over the life course (Finney, 2011) highlight that age does not exert a uniform influence on migration propensity. Indeed, when analyses of migration patterns are aggregated by age, this has been found to mask important variations at the total population level (Sander, 2018). This may be enhanced when differentiated by ethnic group and country of birth. The influence of immigrant status, time spent in the UK, and differences between age groups needs unpacking.

3 | DATA

We employ individual-level microdata for a 5% sample of the enumerated population of England and Wales from the 2011 Census. The sample sizes and breadth of variables available make it an ideal resource for a detailed examination of the determinants of ethnic internal migration by age. We select a sub-sample for ages 16 and over, since for children the attributes of interest will relate to their parents/guardians. Recent international migrants are excluded. These are defined as any individual resident outside of England and Wales 12 months prior to the census, including those who were previously resident in either Scotland or Northern Ireland. Thus, migrants are identified by a one-year migration variable: this distinguishes between "movers" whose address at the census is different to that reported 12 months before the census day, and "stayers" whose address has remained the same. We differentiate between moves of less than 10 km and those of 10 km or more, the threshold used by Champion and Shuttleworth (2017) who demonstrate that, despite some decline in the last few decades, the highest proportion of moves is over distances of less than 10 km.

For the foreign-born groups (identified by country of birth), we make use of the newly introduced question for the 2011 Census identifying how long foreign-born individuals have been resident in the UK. Responses are provided in yearly ranges (1 year, 2–4 years, 5–7 years, 8–10 years and then in nine-year blocks [11–20 years, etc.] up to 70 years plus) which we employ as a control in one of the models defined below. We identify nine ethnic groups: White British, White Other, Black Caribbean, Black African, Indian, Pakistani, Chinese, and Mixed & Other. These groups provide sufficient

sample sizes for cross tabulation with other variables and for modelling purposes. The age groups identified (16–29, 30–44, 45–65 and 65+) differentiate life stages pertinent to migration (single year of age is not available) while retaining sufficient sample sizes. Table 1 summarises the study population by ethnic group, stratifying by country of birth and age. The percentage of movers (both for <10 and ≥10 km) are also identified. Smaller sample sizes in the older ages for UK-born minority groups necessitate caution when interpreting these results. Given the small number of movers among UK-born minority groups aged 65 and over, these results are suppressed.

Independent variables are selected based on their widely reported association with internal migration: age, sex, marital status, National Statistics Socio-economic Classification (NS-SEC), educational attainment, tenure, health and student status. Given the possible importance of region of residence in explaining differences in the propensity to migrate across different distances between ethnic groups (Finney & Simpson, 2008), we also include region of residence in 2010 as a control. Marital status reflects key life transitions which are known triggers of migration (Cooke, 2006; Mulder, 1993). NS-SEC proxies socio-economic status, capturing occupational class. The variable also includes a residual category for those not assigned to a class. Migration propensity has been found to vary by social class (Catney & Simpson, 2010; McCormick, 1997; Smith & Higley, 2012), partly explained by contrasting resources available to different socio-economic groups and the extent to which this enables or curtails opportunities for migration.

Educational attainment differentiates between those qualified to degree level (or equivalent) and above, and those qualified below this threshold (including no qualifications). Differences in migration patterns by educational attainment arise through the interaction with employment opportunities: higher levels of educational attainment are associated with higher rates of migration (Duke-Williams, 2009), explained by the wider employment opportunities available to skilled, highly qualified graduates (Faggian et al., 2006). Tenure differentiates between owner-occupied, privately rented and socially rented households, or those in communal establishments. Tenure is closely associated with migration propensity, influencing opportunities for and the nature of the move (Beatty et al., 2009; Hamnett, 1991): lower rates of mobility are associated with owner occupation and social housing, contrasting with the far higher rates for those in more transitory segments of the housing market (private rentals and communal establishments). Health is measured by the presence or absence of limiting long-term illness (LLTI, combining the responses "limited a little" and "limited a lot"). Health positively selects younger migrants who are more likely to move across greater distances whereas poor health may motivate moves across shorter distances, and act as a trigger for a move in older ages (Bentham, 1988; Boyle et al., 2002; Darlington-Pollock et al., 2018).

4 | METHODS

We calculate the odds of migrating, by ethnic group in 2011, using binary logistic regression, for moves either of less than 10 km or moves of 10 km or more, and with individuals moving respectively at least 10 km or 0–9 km being excluded from either set of models. The odds ratios reveal how different variables explain differences in migration propensity between groups differentiated by age, ethnicity and country of birth. The sample is stratified by country of birth (UK born versus foreign born) and age as a mechanism by which to account for the possible interactions between these factors. This shows whether differences arise between minority ethnic groups relative to the UK-born White British and the extent to which the wider determinants of migration identified above modify the odds of migration. The UK-born White British are included as the reference group in all models to ensure comparisons are consistent. The final model additionally controls for time spent in the UK to determine whether this explains differences in propensity to migrate for foreign-born groups. Modelled probabilities of migrating are presented for each ethnic group by age and country of birth based on the results from the fully adjusted models.

5 | RESULTS

5.1 | Exploring the influence of determinants of migration

Table 1 summarises the proportions of movers within ethnic groups by age and country of birth. The proportion of movers decreases with increasing age for each ethnic group. This is consistent with the expected age schedule of migration whereby mobility rates are highest in younger ages, declining with increasing age. However, there are markedly higher proportions of movers among the foreign-born ethnic groups than the UK born ethnic groups. Some interesting differences emerge within UK-born ethnic groups depending on distance moved. While the majority of moves are made across shorter distances, a higher proportion of Indian and Chinese moves for ages 16–29 are across greater distances.

TABLE 1 Study population by ethnic group including proportion of movers (%), stratified by country of birth and age (excluding ages 65+ for UK-born sample)

	UK born Total population (% moves: <10 km, ≥10 km)			Foreign born Total population (% movers: <10 km, ≥10 km)			
	16–29	30–44	45–64	16–29	30–44	45–64	65+
White British	376,208 (15.2, 10.1)	414,649 (7.5, 3.9)	604,411 (3.0, 1.8)	7,635 (19.6, 14.2)	11,387 (10.0, 5.6)	14,006 (3.5, 2.8)	9,608 (2.0, 1.6)
White Other	4,423 (16.4, 11.7)	5,142 (7.8, 3.5)	5,741 (3.5, 2.0)	28,751 (25.1, 9.4)	40,429 (14.9, 5.5)	22,471 (6.6, 2.6)	14,519 (2.5, 1.3)
Black Caribbean	4,334 (11.5, 7.4)	4,674 (6.4, 2.9)	3,841 (3.8, 1.7)	1,097 (19.4, 8.3)	1,978 (11.4, 4.2)	4,333 (3.6, 1.0)	3,956 (2.7, 0.6)
Black African	2,775 (10.3, 11.1)	1,649 (7.0, 3.6)	643 (4.2, 1.9)	8,167 (18.7, 10.1)	12,376 (14.1, 5.9)	6,585 (7.8, 2.9)	1,111 (7.8, 2.9)
Indian	9,935 (8.1, 9.3)	7,628 (5.5, 3.3)	1,009 (2.9, 1.7)	5,825 (20.7, 9.8)	11,154 (11.6, 5.8)	13,744 (3.1, 1.0)	5,683 (2.2, 0.8)
Pakistani	9,068 (6.2, 3.9)	4,960 (6.2, 2.4)	384 (2.6, 1.0)	4,833 (15.0, 5.1)	8,396 (8.6, 2.6)	6,538 (3.3, 0.8)	2,407 (2.8, 0.6)
Bangladeshi	3,502 (6.3, 3.9)	855 (5.7, 3.6)	59	2,543 (14.0, 5.5)	4,669 (8.2, 2.5)	2,168 (4.4, 1.3)	786 (2.7, 0.6)
Chinese	1,580 (11.8, 13.2)	877 (7.6, 6.6)	128 (3.1, 3.1)	5,133 (30.4, 17.1)	3,621 (13.0, 6.7)	3,308 (3.9, 2.3)	964 (2.7, 1.1)
Mixed & Other	18,866 (13.2, 9.2)	10,693 (8.5, 4.4)	5,565 (4.6, 2.3)	15,242 (19.9, 9.5)	22,381 (13.5, 5.3)	14,221 (6.0, 2.2)	4,447 (2.9, 1.1)

Note. Percentage of movers for UK-born Bangladeshi's aged 45–64 suppressed due to small numbers.

Tables 2–4 present odds of migrating for each ethnic group, by age, country of birth and gender. Statistically significant results ($p < 0.05$) are in bold type. Our focus is on whether and how known covariates with migration explain differences between ethnic groups, rather than the individual role of each of those covariates. Results for the control variables are not presented. Models are defined as follows:

1. In Table 2, all models report on the UK-born sample (with UK-born White British and male as the reference groups). Baseline models adjust for ethnic group and sex; the fully adjusted models also adjust for LLTI, marital status, NS-SEC, educational attainment, household tenure, student status and region of residence in 2010.
2. In Tables 3 and 4, all models report on the foreign-born sample, with the UK-born White British maintained as the reference group (to provide consistency when comparing between models). The controls included in the baseline and fully adjusted models for Table 3 are as in Table 2. Time spent in the UK is included for the models in Table 4.

For UK-born minority groups, the clearest differences are apparent for ages 16–29 and 30–44; this is unsurprising given that rates of migration decline with increasing age (see Table 1). For the youngest age group (16–29), odds of migrating are significantly lower relative to the White British for Black Caribbean, Black African, Indian, Pakistani, Bangladeshi and Mixed & Other. Odds of migrating converge towards the White British in the fully adjusted models for these groups, though remain significantly different. Black Caribbean, Black African, Indian and Pakistani groups aged 30–44 remain significantly less likely to migrate relative to the White British. This is consistent for moves of less than 10 km and 10 km or more for ages 16–29 and 30–44. At ages 45–64, there is slightly more differentiation and considerably fewer statistically significant results: while Black Caribbean appear significantly more likely to move less than 10 km relative to the White British, this is explained by the addition of wider socio-economic and demographic factors in the fully adjusted model. Conversely, the Mixed & Other group remain significantly more likely to move less than 10 km relative to the White British. The extent of differentiation contrasts with the results of Finney and Simpson (2008), demonstrating the need to account for differences by age between ethnic groups and differentiate by distance moved.

Females are significantly more likely to move either distance relative to males at ages 16–29, but are significantly less likely aged 30–44 and 45–64. Nevertheless, the relative differences are smaller in older ages, suggestive of less differentiation in the likelihood of moving compared with younger ages. Such systematic convergence towards the reference group is not apparent between ethnic groups with increasing age. Conversely, differences in odds of migrating are more consistently observed for the foreign-born groups relative to the UK-born White British: these differences are not, in the main, explained by the additional variables included in the adjusted models summarised in Table 3.

At ages 16–29, all foreign-born ethnic groups (bar Black Caribbean and White British for moves <10 km, and White British for moves ≥10 km) are significantly less likely to move across either distance relative to the UK-born White British after controlling for wider socio-economic and demographic factors. By 30–44, while all foreign-born groups are generally significantly more likely to move the shorter distance relative to the UK-born White British population, the inverse is true for White Other, Black Caribbean, Pakistani and Bangladeshi groups for distances of 10 km and over. At ages 45–64, Indians are also significantly less likely to move 10 km or more. The patterning does not vary substantially into ages 65 and over. While the odds ratios in the adjusted models tend to converge towards the reference group, they do remain significantly different. The patterning for females is similar to that observed in Table 2.

Some of the remaining differences are explained by the length of time foreign-born groups have spent in the UK. The results in Table 4 suggest that controlling for time spent in the UK tends to reduce odds of migrating for foreign-born groups such that their propensity to migrate is lower relative to the UK-born White British. However, there are cases when foreign-born minority ethnic groups are still more likely to move across the shorter distance than the UK-born White British, even after controlling for time spent in the UK. After controlling for both time spent in the UK and the wider socio-economic and demographic factors, only Chinese (ages 16–29 at moves of <10 km), White British (ages 16–29 at moves ≥10 km and ages 45–64 at moves ≥10 km), Black African, Bangladeshi and Mixed & Other (all for ages 45–64 at moves <10 km) return significantly raised odds relative to the UK-born White British.

These results emphasise the complexity of the relationship between migration propensity, age, ethnicity and country of birth, while also suggesting that the generally discussed determinants of migration are perhaps insufficient to capture differences between UK-born and foreign-born groups. Age and time spent in the UK exert a clear influence on odds of migrating, varying between ethnic groups, and within UK-born or foreign-born groups.

TABLE 2 Odds of migrating (moves of <10 km, moves of ≥10 km) 2010–2011, UK-born population

	16–29				30–44				45–64			
	<10 km OR (p)		≥10 km OR (p)		<10 km OR (p)		≥10 km OR (p)		<10 km OR (p)		≥10 km OR (p)	
	Base	Adj	Base	Adj	Base	Adj	Base	Adj	Base	Adj	Base	Adj
Constant	0.19	0.10	0.13	0.09	0.09	0.08	0.05	0.04	0.03	0.02	0.02	0.01
WBR	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF
WHO	**1.12 (0.00)**	1.09 (0.07)	**1.21 (0.00)**	1.01 (0.89)	1.05 (0.38)	0.92 (0.13)	**1.26 (0.00)**	0.96 (0.53)	1.15 (0.06)	1.09 (0.26)	1.06 (0.52)	0.87 (0.14)
BLC	**0.69 (0.00)**	**0.80 (0.00)**	**0.68 (0.00)**	**0.74 (0.00)**	**0.84 (0.00)**	**0.69 (0.00)**	**0.73 (0.00)**	**0.58 (0.00)**	**1.26 (0.01)**	1.09 (0.33)	0.95 (0.67)	**0.74 (0.02)**
BLA	**0.64 (0.00)**	**0.71 (0.00)**	1.02 (0.77)	0.91 (0.21)	0.92 (0.41)	**90.65 (0.00)**	0.91 (0.48)	**0.56 (0.00)**	**1.41 (0.00)**	1.06 (0.76)	1.04 (0.90)	0.62 (0.10)
IND	**0.48 (0.00)**	**0.73 (0.00)**	**0.83 (0.00)**	**0.81 (0.00)**	**0.71 (0.00)**	**0.86 (0.00)**	**0.81 (0.00)**	**0.85 (0.01)**	0.95 (0.77)	1.15 (0.46)	0.91 (0.71)	0.93 (0.76)
PAK	**0.34 (0.00)**	**0.49 (0.00)**	**0.32 (0.00)**	**0.40 (0.00)**	**0.80 (0.00)**	0.95 (0.36)	**0.59 (0.00)**	**0.69 (0.00)**	0.85 (0.61)	0.71 (0.29)	0.56 (0.25)	0.47 (0.14)
BAN	**0.34 (0.00)**	**0.45 (0.00)**	**0.33 (0.00)**	**0.50 (0.00)**	**0.75 (0.05)**	**0.73 (0.04)**	0.91 (0.59)	0.84 (0.37)	1.65 (0.40)	1.28 (0.68)	-	-
CHI	**0.77 (0.00)**	**0.77 (0.00)**	**1.31 (0.00)**	1.07 (0.45)	1.04 (0.76)	0.97 (0.79)	**1.72 (0.00)**	**1.38 (0.02)**	1.05 (0.93)	1.02 (0.96)	1.72 (0.29)	1.38 (0.54)
MIX	**0.84 (0.00)**	**0.87 (0.00)**	**0.88 (0.00)**	**0.90 (0.00)**	**1.15 (0.00)**	0.94 (0.11)	**1.13 (0.01)**	**0.88 (0.01)**	**1.55 (0.00)**	**1.16 (0.02)**	**1.26 (0.01)**	0.97 (0.71)
Male	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF
Female	**1.21 (0.00)**	**1.14 (0.00)**	**1.06 (0.00)**	**1.07 (0.00)**	**0.81 (0.00)**	**0.82 (0.00)**	**0.69 (0.00)**	**0.74 (0.00)**	**0.91 (0.00)**	**0.92 (0.00)**	**0.82 (0.00)**	**0.87 (0.00)**

Note. BAN, Bangladeshi; BLA, Black African; BLC, Black Caribbean; CHI, Chinese; IND, Indian; MIX, Mixed & Other; PAK, Pakistani; WBR, White British; WHO, White Other. Baseline (Base): adjusts for ethnic group, gender; adjusted (Adj): adjusts for ethnic group, gender, limiting long-term illness (LLTI), marital status, National Statistics Socio-economic Classification (NS-SEC), educational attainment, household tenure, student status, region of residence in 2010.
Significant odds ratios (ORs) in bold. Due to small numbers, results for all ethnic groups aged 65 and over, and Bangladeshis aged 45–64 are not shown.

TABLE 3 Odds of migrating (moves of <10 km, moves of ≥10 km) 2010–2011, foreign-born population[a]

	16–29				30–44				45–64				65+			
	<10 km OR (p)		≥10 km OR (p)		<10 km OR (p)		≥10 km OR (p)		<10 km OR (p)		≥10 km OR (p)		<10 km OR (p)		≥10 km OR (p)	
	Base	Adj	Base	Adj	Base	Adj	Base	Adj	Base	Adj	Base	Adj	Base	Adj	Base	Adj
Constant	0.19	0.11	0.13	0.10	0.10	0.08	0.05	0.05	0.03	0.02	0.02	0.01	0.02	0.01	0.01	0.01
WBR-UK	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF
WBR	**1.45 (0.00)**	1.05 (0.14)	**1.59 (0.00)**	1.00 (0.99)	**1.40 (0.00)**	**1.16 (0.00)**	**1.49 (0.00)**	**1.11 (0.02)**	**1.19 (0.00)**	1.08 (0.13)	**1.58 (0.00)**	**1.20 (0.00)**	0.98 (0.76)	1.03 (0.68)	**1.31 (0.00)**	1.10 (0.24)
WHO	**1.87 (0.00)**	**0.90 (0.00)**	**1.07 (0.00)**	**0.55 (0.00)**	**2.21 (0.00)**	**1.30 (0.00)**	**1.56 (0.00)**	**0.85 (0.00)**	**2.31 (0.00)**	**1.54 (0.00)**	**1.50 (0.00)**	**0.89 (0.01)**	**1.19 (0.00)**	**1.20 (0.00)**	1.07 (0.33)	0.95 (0.53)
BLC	**1.31 (0.00)**	0.99 (0.90)	0.85 (0.15)	**0.61 (0.00)**	**1.61 (0.00)**	1.07 (0.35)	1.15 (0.22)	**0.79 (0.04)**	**1.21 (0.02)**	1.00 (0.98)	**0.53 (0.00)**	**0.46 (0.00)**	**1.30 (0.01)**	**1.33 (0.01)**	**0.49 (0.00)**	**0.46 (0.00)**
BLA	**1.28 (0.00)**	**0.91 (0.00)**	1.05 (0.21)	**0.72 (0.00)**	**2.10 (0.00)**	**1.36 (0.00)**	**1.68 (0.00)**	**1.12 (0.01)**	**2.74 (0.00)**	**1.74 (0.00)**	**1.67 (0.00)**	1.01 (0.88)	**3.09 (0.01)**	**2.78 (0.00)**	0.90 (0.72)	**0.64 (0.00)**
IND	**1.47 (0.00)**	**0.90 (0.00)**	1.04 (0.34)	**0.52 (0.00)**	**1.64 (0.00)**	**1.44 (0.00)**	**1.58 (0.00)**	**1.18 (0.00)**	1.01 (0.84)	**1.29 (0.00)**	**0.54 (0.00)**	**0.61 (0.00)**	1.07 (0.49)	**1.50 (0.00)**	**0.68 (0.01)**	**0.74 (0.04)**
PAK	**0.92 (0.04)**	**0.80 (0.00)**	**0.48 (0.00)**	**0.41 (0.00)**	**1.13 (0.00)**	**1.15 (0.00)**	**0.66 (0.00)**	**0.72 (0.00)**	1.07 (0.36)	1.11 (0.15)	**0.45 (0.00)**	**0.52 (0.00)**	**1.39 (0.01)**	**1.93 (0.00)**	**0.50 (0.01)**	0.64 (0.09)
BAN	**0.85 (0.01)**	**0.72 (0.00)**	**0.50 (0.00)**	**0.53 (0.00)**	1.07 (0.22)	1.11 (0.07)	**0.62 (0.00)**	**0.79 (0.01)**	**1.47 (0.00)**	**1.53 (0.00)**	0.73 (0.09)	0.89 (0.53)	1.32 (0.21)	1.50 (0.07)	0.51 (0.14)	0.56 (0.20)
CHI	**2.84 (0.00)**	**1.51 (0.00)**	**2.42 (0.00)**	**0.54 (0.00)**	**1.94 (0.00)**	**1.46 (0.00)**	**1.94 (0.00)**	**1.31 (0.00)**	**1.32 (0.00)**	**1.30 (0.01)**	**1.28 (0.03)**	1.09 (0.46)	1.32 (0.16)	**1.50 (0.00)**	0.92 (0.79)	**0.72 (0.03)**
MIX	**1.39 (0.00)**	**0.88 (0.00)**	1.00 (0.93)	**0.60 (0.00)**	**1.95 (0.00)**	**1.35 (0.00)**	**1.46 (0.00)**	1.01 (0.89)	**2.05 (0.00)**	**1.54 (0.00)**	**1.22 (0.00)**	**0.85 (0.01)**	**1.43 (0.00)**	**1.59 (0.00)**	0.85 (0.28)	**0.72 (0.03)**
Male	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF
Female	**1.14 (0.00)**	**1.10 (0.00)**	**1.04 (0.00)**	**1.05 (0.00)**	**0.80 (0.00)**	**0.83 (0.00)**	**0.71 (0.00)**	**0.76 (0.00)**	**0.90 (0.00)**	**0.92 (0.00)**	**0.82 (0.00)**	**0.87 (0.00)**	**1.20 (0.00)**	**0.92 (0.00)**	1.04 (0.13)	**0.92 (0.00)**

Note. BAN, Bangladeshi; BLA, Black African; BLC, Black Caribbean; CHI, Chinese; IND, Indian; MIX, Mixed & Other; PAK, Pakistani; WBR, White British; WHO, White Other. Baseline (Base): adjusts for ethnic group, gender; adjusted (Adj): adjusts for ethnic group, gender, limiting long-term illness (LLTI), marital status, National Statistics Socio-economic Classification (NS-SEC), educational attainment, household tenure, student status, region of residence in 2010.

[a]WBR-UK-born population included as reference; all others born outside the UK. Significant odds ratios (ORs) in bold.

TABLE 4 Odds of migrating (moves of <10 km, moves of ≥10 km) 2010–2011, foreign-born population[a] controlling for time spent in UK

	16–29				30–44				45–64				65+			
	<10 km OR (p)		≥10 km OR (p)		<10 km OR (p)		≥10 km OR (p)		<10 km OR (p)		≥10 km OR (p)		<10 km OR (p)		≥10 km OR (p)	
	Base	Adj	Base	Adj	Base	Adj	Base	Adj	Base	Adj	Base	Adj	Base	Adj	Base	Adj
Constant	0.19	0.11	0.13	0.10	0.09	0.11	0.05	0.10	0.09	0.09	0.05	0.05	0.03	0.02	0.02	0.01
WBR-UK	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF
WBR	**1.14 (0.00)**	**0.94 (0.05)**	**1.51 (0.00)**	**1.09 (0.04)**	**1.12 (0.00)**	1.00 (0.89)	**1.27 (0.00)**	1.03 (0.49)	1.01 (0.84)	0.96 (0.44)	**1.43 (0.00)**	**1.15 (0.01)**	0.91 (0.19)	0.95 (0.53)	**1.26 (0.01)**	1.07 (0.43)
WHO	**0.94 (0.04)**	**0.67 (0.00)**	**0.88 (0.00)**	**0.69 (0.00)**	**1.09 (0.00)**	**0.83 (0.00)**	**0.92 (0.01)**	**0.68 (0.00)**	**1.22 (0.00)**	1.00 (1.00)	1.01 (0.91)	**0.75 (0.00)**	1.03 (0.61)	1.05 (0.41)	0.99 (0.85)	0.89 (0.15)
BLC	0.96 (0.57)	0.87 (0.10)	**0.80 (0.04)**	**0.70 (0.00)**	1.09 (0.24)	**0.85 (0.03)**	0.85 (0.14)	**0.70 (0.00)**	1.05 (0.56)	0.90 (0.20)	**0.49 (0.00)**	**0.44 (0.00)**	**1.23 (0.04)**	**1.27 (0.02)**	**0.47 (0.00)**	**0.46 (0.00)**
BLA	**0.82 (0.00)**	**0.76 (0.00)**	0.95 (0.28)	**0.86 (0.00)**	**1.21 (0.00)**	0.97 (0.38)	**1.10 (0.03)**	0.95 (0.31)	**1.53 (0.00)**	**1.26 (0.00)**	1.16 (0.06)	0.90 (0.21)	**1.91 (0.00)**	**1.92 (0.00)**	0.67 (0.17)	**0.54 (0.04)**
IND	**0.74 (0.00)**	**0.65 (0.00)**	**0.84 (0.00)**	**0.65 (0.00)**	**0.92 (0.01)**	0.97 (0.47)	1.03 (0.59)	0.97 (0.50)	**0.81 (0.00)**	1.09 (0.10)	**0.47 (0.00)**	**0.58 (0.00)**	0.90 (0.26)	**1.30 (0.01)**	**0.61 (0.00)**	**0.70 (0.02)**
PAK	**0.53 (0.00)**	**0.63 (0.00)**	**0.41 (0.00)**	**0.50 (0.00)**	**0.75 (0.00)**	**0.87 (0.00)**	**0.49 (0.00)**	**0.63 (0.00)**	**0.83 (0.01)**	0.94 (0.43)	**0.39 (0.00)**	**0.49 (0.00)**	1.10 (0.45)	**1.60 (0.00)**	**0.44 (0.00)**	**0.59 (0.04)**
BAN	**0.53 (0.00)**	**0.57 (0.00)**	**0.44 (0.00)**	**0.63 (0.00)**	**0.81 (0.00)**	0.91 (0.11)	**0.51 (0.00)**	**0.72 (0.00)**	1.19 (0.10)	**1.34 (0.01)**	**0.64 (0.02)**	0.84 (0.36)	1.19 (0.10)	1.32 (0.22)	**0.64 (0.02)**	0.53 (0.16)
CHI	**1.37 (0.00)**	**1.10 (0.04)**	**1.83 (0.00)**	**0.71 (0.00)**	**1.13 (0.02)**	1.04 (0.44)	**1.29 (0.00)**	1.11 (0.16)	0.94 (0.48)	1.06 (0.57)	1.04 (0.73)	1.01 (0.92)	0.94 (0.48)	1.33 (0.16)	1.04 (0.73)	0.86 (0.63)
MIX	**0.79 (0.00)**	**0.69 (0.00)**	**0.85 (0.00)**	**0.73 (0.00)**	**1.09 (0.00)**	**0.95 (0.05)**	0.94 (0.10)	**0.84 (0.00)**	**1.23 (0.00)**	**1.12 (0.01)**	0.89 (0.06)	**0.76 (0.00)**	**1.23 (0.00)**	**1.24 (0.03)**	0.89 (0.06)	**0.65 (0.01)**
Male	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF	REF
Female	**1.14 (0.00)**	**1.11 (0.00)**	**1.04 (0.00)**	**1.05 (0.00)**	**0.81 (0.00)**	**0.83 (0.00)**	**0.72 (0.00)**	**0.76 (0.00)**	**0.91 (0.00)**	**0.91 (0.00)**	**0.83 (0.00)**	**0.87 (0.00)**	**1.20 (0.00)**	**0.92 (0.00)**	1.04 (0.13)	**0.92 (0.00)**

Note. BAN, Bangladeshi; BLA, Black African; BLC, Black Caribbean; CHI, Chinese; IND, Indian; MIX, Mixed & Other; PAK, Pakistani; WBR, White British; WHO, White Other. Baseline: adjusts for ethnic group, gender, time spent in UK; adjusted: adjusts for ethnic group, gender, limiting long-term illness (LLTI), marital status, National Statistics Socio-economic Classification (NS-SEC), educational attainment, household tenure, student status, region of residence, time spent in UK.

[a]WBR-UK-born population included as reference; all others born outside the UK. Significant odds ratios (ORs) in bold.

5.2 | Comparing probabilities of migrating

Figure 1 presents modelled probabilities of migrating by ethnic groups, age and country of birth. As noted previously, the models are based on two distinct samples: one restricted to the UK-born population (Figure 1a,c), and one restricted to the foreign-born population but including the UK-born White British (Figure 1b,d). Both samples are then stratified by age before the models are run. The probabilities are calculated using the output from the relevant binary logistic regression models. Note that the probability reported for the UK-born White British reference group varies (marginally) between the two models. This does not alter the interpretation. Age, or stage in the life course, seems to exert different influences on the probability of migrating for different ethnic groups, to some extent countering the consensus that people are most mobile in the younger years of adulthood. The shift in the peak to the age schedule of migration is one that is starting to appear in the literature, a product in part of ageing populations but also wider attitudinal and behavioural changes in migration behaviour (Frey, 2018).

While the "traditional" age patterning to the probabilities of migrating is apparent for moves of 10 km or more, there is more differentiation within both UK-born and foreign-born ethnic groups for shorter distance moves. For the UK-born, Pakistanis have the highest probability of moving (<10 km) at ages 30–44. Though this is also true for Bangladeshis, Black African, Indian, and Mixed & Other, the differences between ages 16–29 and 30–44 are not significant. For the foreign-born minority groups, higher probabilities of moving (≥10 km) are returned at ages 30–44 for Black Africans, Indians, Pakistanis, Bangladeshis, and Mixed & Other groups – though differences are not significant.
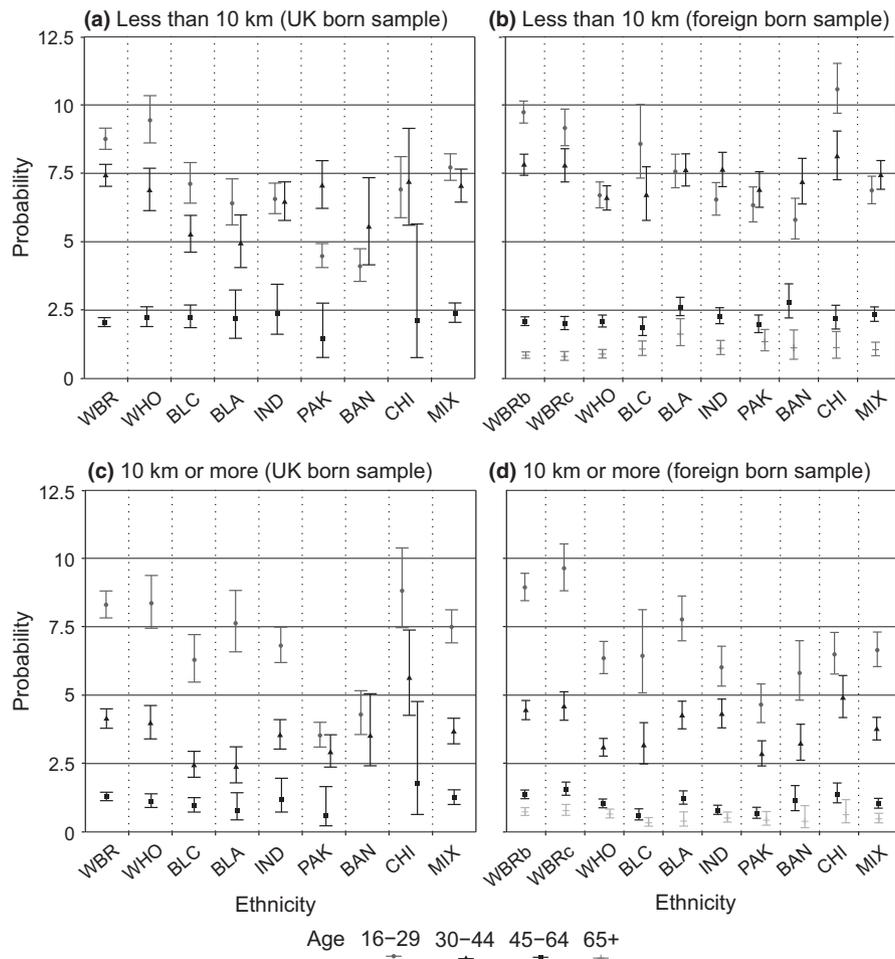
FIGURE 1 Probabilities of moving by ethnic group and age: (a) Less than 10 km (UK-born sample); (b) Less than 10 km (foreign-born sample); (c) 10 km or more (UK-born sample); (d) 10 km or more (foreign-born sample). *Note.* BAN, Bangladeshi; BLA, Black African; BLC, Black Caribbean; CHI, Chinese; IND, Indian; MIX, Mixed & Other; PAK, Pakistani; WBR, UK-born White British (UK-born sample); WBRb, UK-born White British (foreign-born sample); WBRc, foreign-born White British; WHO, White Other. For the UK-born group sample, age groups are restricted to 16–29, 30–44 and 45–64 due to small numbers. UK-born Bangladeshi ages 45–64 suppressed.

These differences, not explained by the additional attributes adjusted for in these models, may relate to differences in pathways out of the family home (Finney, 2011), whereby these groups delay moving away from the place where they grew up. Similarly, it may reflect differences in the desire (or need) for greater local rootedness. For example, the benefit of maintaining a connection with one's local community may vary between differently marginalised or disadvantaged groups, shaping propensity (not) to move across different distances. However, it may also reflect the more complex relationship between education, migration, and later employment for minority groups compared with the majority population, not captured in these data. Unequal access to different higher education institutions between ethnic groups may impact on employment prospects, disrupting the relationship between educational attainment and propensity to migrate. Education attainment may be an important trigger of migration for White groups, but employment status is more important for ethnic groups (Raymer & Giulietti, 2009). Further, non-White groups are less likely to move away from the home environment for educational purposes which, according to wider literatures on migration propensities and income, detrimentally influences later-life earning potential and may influence subsequent internal migration trajectories (Faggian et al., 2006).

Aside from the White Other aged 16–29, all UK-born minority groups aged 16–44 have lower probabilities of moving less than 10 km than the White British, contrasting with more differentiation in older ages. For moves of 10 km or more, only the White Other (16–29 and 65+), Chinese (16–29, 30–44 and 45–64) and Black African (65+) have a higher probability of moving than the White British. Pakistanis, Black Africans and Bangladeshis are the least mobile over less than 10 km at ages 16–29, 30–44 and 45–64, respectively. Over greater distances, this holds for Pakistanis and Black Africans. For the foreign-born minority ethnic groups, probabilities of moving less than 10 km in ages 65 and over are invariably (marginally) higher than those for both the UK-born and foreign-born White British. The inverse is true for younger ages. The lowest probabilities of moving less than 10 km are found for Bangladeshis aged 16–29, White Other aged 30–44, Black Caribbean aged 45–64, and the foreign-born White British aged 65 and over. For moves of 10 km or more, only the foreign-born White British consistently have a higher probability of moving than the UK-born White British. At ages 16–29 and 30–44, the Pakistani group is the least mobile over 10 km whereas the Black Caribbean group is the least mobile in older ages.

5.3 | Interpreting differences over the life course

Life course approaches to studies of population movement typically focus on whether key life events or transitions act as triggers for migration or residential mobility (Mulder & Hooimeijer, 1999). Widely observed variations in age-specific rates of migration are framed as coincident with key life events (Fotheringham et al., 2004), particularly entering and exiting higher education, entering the labour market, union formation and dissolution, or childbirth. Decisions on whether to migrate and over what distance, triggered by these life events, are shaped by individual connections within local support networks (Mulder, 2007), both within and beyond the household unit (Elder et al., 2003). These individual connections, and the extent to which different life events act as a trigger for migration, vary depending on meso- and macro-level factors. This will differently shape pathways out of the family home which may have lasting effects on subsequent internal migration propensity. For example, if non-White groups are more likely to remain in the family home while studying in higher education, this may suppress later life migration propensity (Faggian et al., 2006). A negative framing of this may focus on apparent limitation of opportunities; a more favourable interpretation emphasises the value of social connections between different groups, and a preference for stability rather than limited opportunities for migration, irrespective of wider socio-economic attributes. Debates around declining or stabilising rates of internal migration are triangulating attention on the question of "frustrated stayers" trapped by default, or "happy stayers" remaining by choice (Champion & Shuttleworth, 2017).

It is likely that variations will exist between ethnic groups due to contrasting historic settlement patterns defining attachment to specific places, access to wider opportunity structures, and the degree of integration or dispersal within society. Given the connection between individual-level influences and wider structural conditions in society, it is assumed that the importance of different individual-level factors as "selectors" of migrants may vary over time, and between groups. For example, changes in local opportunity structures, such as in housing or labour markets, may constrain or enable mobility patterns at the meso level (Mulder & Hooimeijer, 1999). At the macro level, national changes in welfare provision, housing policy, or long-term cultural shifts may further constrain or enable mobility patterns (see Findlay et al., 2015), as indeed may immigration policy.

Decisions (not) to migrate across the life course will be tied up in the connectivity of people's lives, whether bound through marriage, blood or friendship. Operating alongside these relationally linked lives (Coulter et al., 2016), changing

opportunity structures may constrain or enable ability to migrate. Vulnerability or resilience to changing opportunity structures, whether in the labour, housing or education market, and the implications for migrant decision-making, will be shaped by social ties between people in places. However, while social ties may help counter the negative impacts of changing opportunity structures, marginalised groups, including those of lower socio-economic status, are more vulnerable to macro-economic conditions. This may prevent moves in times of economic prosperity, yet force moves during austerity (Findlay et al., 2015). It might be argued that the inverse is true for higher socio-economic groups who are able to take advantage of more prosperous conditions, emerging opportunities in the housing or labour market, and better be able to withstand economic downturns. As ethnic minority groups are disproportionately represented in lower socio-economic groups and in more deprived geographic areas, changing macro-economic and social conditions may hold different implications for internal migration patterns between different ethnic groups.

6 | CONCLUSION

In this paper, we have asked whether ethnically differentiated patterns of internal migration may be explained by differences in the influence of widely reported determinants or drivers of migration. We sought to account for the hitherto neglected interplay between ethnicity, age and county of birth in shaping differences in propensity to migrate for different ethnic groups in the UK. Contrasting with key previous studies, we found that differences in migration propensity between ethnic groups differentiated by country of birth or age were not explained by the socio-economic factors controlled for in our models. Further, foreign-born groups seemed to have very different propensities to migrate than might otherwise be expected given the wider literature on migration propensity. However, some of these differences were explained by time spent in the UK for foreign-born groups. Controlling for time spent in the UK reduced the propensity to migrate for the foreign-born minority ethnic groups such that it was lower than the UK-born White British. While it may be assumed that a local population approaching mid-life may become more rooted, this may not be the case for those born overseas, depending on their intention to remain in the UK, or of a particular ethnicity.

We differentiated moves according to distance (<10 or ≥10 km). UK-born minority ethnic groups are generally less likely to move across either distance than the UK-born White British. Among foreign-born groups, there is more variation in older ages. For example, by ages 45–64, while Black African, Bangladeshi and Chinese are more likely to move less than 10 km than the UK-born White British; they are less likely to move 10 km or more. These differences remain when controlling for time spent in the UK. Questions arise as to the factors driving such local mobility (or, analogously, driving such local rootedness): to paraphrase Champion and Shuttleworth (2017), are we identifying frustrated stayers/local movers, or happy stayers/local movers? These questions are pertinent to debates on integration and warrant further investigation in order to inform future policy development.

This paper provides insights into the complexities of internal migration, clearly demonstrating the need to integrate discussions of international and internal migration (King & Skeldon, 2010). While previous research suggests that ethnically differentiated patterns of internal migration can be explained by socio-economic difference, our results demonstrate that the dynamics are more complex and provide evidence of a need for further work examining the dynamics of ethnic internal migration. Further work using longitudinal data capturing the varying migration trajectories of different ethnic groups might provide more insight into the nature of a migration event and reveal whether remaining unexplained differences are reflective of barriers to integration, a lack of rootedness, or indeed a preference for mobility (at the household and individual level). Time in the UK (or indeed any host society) is important to discussions of integration. Does increasing longevity in the country herald convergence of opportunities and experiences for migrant groups with the host population, reflected in comparable internal migration propensities? Or, do differences remain? Although the results presented shed light on these issues, it is difficult to entirely disentangle the effects of time spent in the UK entirely from those of the natural ageing process and the extent to which this re-shapes individual propensities to migrate. Qualitative research may be better able to disentangle choice from constraint and understand the nature of barriers and whether these vary between ethnic groups; and to determine the relationship between increasing longevity in the UK and patterns of internal migration for foreign-born minority groups.

DATA ACCESSIBILITY

ORCID

Frances Darlington-Pollock http://orcid.org/0000-0001-5544-4459
Nik Lomax http://orcid.org/0000-0001-9504-7570
Paul Norman http://orcid.org/0000-0002-6211-1625

REFERENCES

Beatty, C., Lawless, P., Pearson, S., & Wilson, I. (2009). *Residential mobility and outcome change in deprived areas, Evidence from the New Deal for Communities Programme*. Retrieved from http://extra.shu.ac.uk/ndc/downloads/reports/Residential mobility and outcome change in deprived areas.pdf

Bentham, G. (1988). Migration and morbidity: Implications for geographical studies of disease. *Social Science and Medicine*, 26, 49–54. https://doi.org/10.1016/0277-9536(88)90044-5

Bernard, A., Bell, M., & Charles-Edwards, E. (2014). Life-course transitions and the age profile of internal migration. *Population and Development Review*, 40, 213–239. https://doi.org/10.1111/j.1728-4457.2014.00671.x

Boyle, P., Norman, P., & Rees, P. (2002). Does migration exaggerate the relationship between deprivation and limiting long-term illness? A Scottish analysis. *Social Science and Medicine*, 55, 21–31. https://doi.org/10.1016/S0277-9536(01)00217-9

Catney, G., & Simpson, L. (2010). Settlement area migration in England and Wales: Assessing evidence for a social gradient. *Transactions of the Institute of British Geographers*, 35, 571–584. https://doi.org/10.1111/j.1475-5661.2010.00400.x

Champion, T. (2005). Population movement within the UK. In R. Chappell (Ed.), *Focus on people and migration* (pp. 91–114). London, UK: Palgrave Macmillan.

Champion, T., & Shuttleworth, I. (2017). Is Longer-distance migration slowing? An analysis of the annual record for England and Wales since the 1970s. *Population, Space and Place*, 23, e2024. https://doi.org/10.1002/psp.2024

Clark, W. A. V. (2013). The aftermath of the general financial crisis for the ownership society: what happened to low- income homeowners in the US? *International Journal of Housing Policy*, 13, 227–246. https://doi.org/10.1080/14616718.2013.796811

Cooke, T. J. (2006). *Family migration matters*. In Moving Americans Conference, National Institute of Health, Demographic and Behavioural Science Branch. Seattle, USA.

Coulter, R., van Ham, M., & Findlay, A. M. (2016). Re-thinking residential mobility. *Progress in Human Geography*, 40, 352–374. https://doi.org/10.1177/0309132515575417

Darlington-Pollock, F., & Norman, P. (2017). Examining ethnic inequalities in health and tenure in England: A repeated cross-sectional analysis. *Health and Place*, 46, 82–90 https://doi.org/10.1016/j.healthplace.2017.04.011

Darlington-Pollock, F., Norman, P., & Ballas, D. (2018). Using census microdata to explore inter-relationships between ethnicity, health, socio-economic factors and internal migration. In J. Stillwell (Ed.), *The Routledge handbook of census resources, methods and applications* (pp. 320–333). Abingdon, UK: Routledge.

Duke-Williams, O. (2009). The geographies of student migration in the UK. *Environment and Planning A*, 41, 1826–1849. https://doi.org/10.1068/a4198

Elder, G., Johnson, M., & Crosnoe, R. (2003). The emergence and development of life course in theory. In J. Mortimer, & M. J. Shanahan (Eds.), *Handbook of the life course* (pp. 3–19). New York, NY: Kluwer Academic/Plenum Publishers.

Faggian, A., Mccann, P., & Sheppard, S. (2006). An analysis of ethnic differences in UK graduate migration behaviour. *The Annals of Regional Science*, 40, 461–471. https://doi.org/10.1007/s00168-006-0061-y

Findlay, A., Mccollum, D., Coulter, R., & Gayle, V. (2015). New mobilities across the life course: A framework for analysing demographically linked drivers of migration. *Population Space Place*, 21, 390–402. https://doi.org/10.1002/psp.1956

Finney, N. (2011). Understanding ethnic differences in the migration of young adults within Britain from a lifecourse perspective. *Transactions of the Institute of British Geographers*, 36, 455–470. https://doi.org/10.1111/j.1475-5661.2011.00426.x

Finney, N., & Simpson, L. (2008). Internal migration and ethnic groups: Evidence for Britain from the 2001 census. *Population, Space and Place*, 14, 63–83. https://doi.org/10.1002/psp.481

Fotheringham, A., Rees, P., Champion, T., Kalogirou, S., & Tremayne, A. R. (2004). The development of a migration model for England and Wales : overview and modelling out-migration. *Environment and Planning A*, 36, 1633–1672. https://doi.org/10.1068/a36136

Frey, W. H. (2018). Internal migration: what does the future hold? In T. Champion, T. J. Cooke, & I. Shuttleworth (Eds.), *Internal migration in the developed world, are we becoming less mobile?* (pp. 265–271). Abingdon, UK: Routledge.

Green, A. (2018). Understanding the drivers of internal migration. In T. Champion, T. J. Cooke, & I. Shuttleworth (Eds.), *Internal migration in the developed world, are we becoming less mobile?* (pp. 31–55). Abingdon, UK: Routledge.

Hamnett, C. (1991). The relationship between residential migration and housing tenure in London, 1971–81: A longitudinal analysis. *Environment and Planning A*, *23*, 1147–1162. https://doi.org/10.1068/a231147

HESA (2017). *Where do HE students come from?* Retrieved from https://www.hesa.ac.uk/data-and-analysis/students/where-from (last accessed 20 August 2002).

King, R., & Skeldon, R. (2010). "Mind the Gap!" integrating approaches to internal and international migration. *Journal of Ethnic and Migration Studies*, *36*, 1619–1646. https://doi.org/10.1080/1369183X.2010.489380

Lievesley, N. (2010). *The future ageing of the ethnic minority population of England and Wales*. Centre for Policy on Ageing/Runnymede. Retrieved from https://www.runnymedetrust.org/uploads/publications/pdfs/TheFutureAgeingOfTheEthnicMinorityPopulation-ForWebJuly2010.pdf (last accessed October 2018).

Lomax, N., Norman, P., Rees, P., & Stillwell, J. (2013). Subnational migration in the United Kingdom: Of available data and estimates. *Journal of Population Research*, *30*, 265–288. https://doi.org/10.1007/s12546-013-9115-z

Lomax, N., & Rees, P. (2015). UK Internal Migration by Ethnicity. In Presentation at the GISRUK2015 Conference, University of Leeds. March 2015. Retrieved from http://leeds.gisruk.org/abstracts/GISRUK2015_submission_110.pdf

Lomax, N., & Stillwell, J. (2018). United Kingdom: Temporal change in internal migration. In T. Champion, T. J. Cooke, & I. Shuttleworth (Eds.), *Internal migration in the developed world, are we becoming less mobile?* (pp. 120–146). Abingdon, UK: Routledge.

McCormick, B. (1997). Regional unemployment and labour mobility in the UK. *European Economic Review*, *41*, 581–589. https://doi.org/10.1016/S0014-2921(97)00024-X

Mulder, C. H. (1993). *Migration dynamics. A life course approach*. Amsterdam, The Netherlands: Thesis Publishers.

Mulder, C. H. (2007). The family context and residential choice: A challenge for new research. *Population, Space and Place*, *13*, 265–278. https://doi.org/10.1002/(ISSN)1544-8452

Mulder, C. H., Clark, W. A. V., & Wagner, M. (2002). A comparative analysis of leaving home in the United States, the Netherlands and West Germany. *Demographic Research*, *7*, 565–592. https://doi.org/10.4054/DemRes. 2002.7.17

Mulder, C. H., & Hooimeijer, P. (1999). Residential relocations in the life course. In L. J. G. van Wissen & P. A. Dykstra (Eds.), *Population issues: An interdisciplinary focus* (pp. 159–186). New York, NY: Kluwer.

ONS (2017). *International immigration and the labour market, UK: 2016*. Retrieved from https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/articles/migrationandthelabourmarketuk/2016#main-points (last accessed 20 August 2002).

Raymer, J., & Giulietti, C. (2009). Ethnic migration between area groups in England and Wales. *Area*, *41*, 435–451. https://doi.org/10.1111/j.1475-4762.2009.00884.x

Rees, P., Wohland, P., Norman, P., & Boden, P. (2012). Ethnic population projections for the UK, 2001–2051. *Journal of Population Research*, *29*, 45–89 https://doi.org/10.1007/s12546-011-9076-z

Rees, P., Wohland, P., Norman, P., Lomax, N., & Clark, S. (2016). Population projections by ethnicity: Challenges and a solution for the United Kingdom. In D. Swanson (Ed.), *The frontiers of applied demography* (pp. 383–408). Amsterdam, The Netherlands: Springer.

Sander, N. (2018). Germany: internal migration within a changing nation. In T. Champion, T. J. Cooke, & I. Shuttleworth (Eds.), *Internal migration in the developed world, are we becoming less mobile?* (pp. 226–241). Abingdon, UK: Routledge.

Smith, D. P., & Higley, R. (2012). Circuits of education, rural gentrification, and family migration from the global city. *Journal of Rural Studies*, *28*, 49–55. https://doi.org/10.1016/j.jrurstud.2011.08.001

Stillwell, J., Bell, M., & Shuttleworth, I. (2018). Studying internal migration in a cross-national context. In T. Champion, T. J. Cooke, & I. Shuttleworth (Eds.), *Internal migration in the developed world, are we becoming less mobile?* (pp. 56–75). Abingdon, UK: Routledge.

Stillwell, J., & Hussain, S. (2010). Exploring the ethnic dimension of internal migration in great Britain using migration effectiveness and spatial connectivity. *Journal of Ethnic and Migration Studies*, *36*, 1381–1403. https://doi.org/10.1080/1369183x.2010.497987