Received: 14 August 2020 | Revised: 17 January 2021 | Accepted: 28 January 2021

DOI: 10.1002/psp.2444

RESEARCH ARTICLE

WILEY

Individual residential mobility, immobility, and political attitudes: The case of Brexit voting intentions in the 2016 UK EU Referendum

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Abstract

One explanation of the results of the UK EU Referendum and the US Presidential Election in 2016 has been as a triumph of citizens of 'somewhere'—localised and rooted—over the cosmopolitan and spatially mobile citizens of 'anywhere', placing residential mobility and its effects on political attitudes at the heart of debates about the causes of populist voting. This paper contributes to these debates by using *Understanding Society*[1] to examine how residential mobility shaped Referendum voting intentions with a particular focus on the differential impacts of short- and long-distance moves. It also explores how the effects of migration vary by age. It finds that for an all-age sample, those respondents who made at least one address change of 50 km or more were less likely plan to vote 'Leave' relative to those who did not move at all. Restricting the analysis to those aged 25 or older, residential mobility became statistically insignificant; Brexit voting could be explained without reference to residential mobility. However, analysing only 16–24 year olds, long-distance residential mobility was again statistically significant even in the fully specified model. It is concluded that residential mobility is most important and formative for the attitudes of younger people but has little or no impact on older sections of the population.

KEYWORDS
Brexit, personality, residential mobility

1 | INTRODUCTION

One analysis of the outcome of the UK's 2016 Referendum on membership of the European Union has sought to find an explanation in the tension between left-behind and localised places and people, and cosmopolitan, mobile and globalised places and people. This cultural and political division cuts across and to some extent supersedes the Left/Right continuum (Inglehart & Norris, 2016) and can also take other forms such as larger cities as opposed to smaller towns and rural areas or the old versus the young. It has considerable popular purchase with citizens of 'nowhere' and 'somewhere' referenced in Prime Minister May's speech to the 2016 Tory Party Conference and its use in interpretations of the results of the 2016 U.S. presidential

[1] Understanding Society, University of Essex, Institute for Social and Economic Research, NatCen Social Research, Kantar Public. (2019). Understanding Society: Waves 1–9, 2009–2018 and Harmonised BHPS: Waves 1–18, 1991–2009. [data collection]. 12th Edition. UK Data Service. SN: 6614

[Correction added on 20 April 2021, after first online publication: Author's name 'Thoroddur' has been corrected and affiliations 3 and 4 were added to this version.]

election (Goodhart, 2017). It remains to be seen if the populist tide has ebbed since 2016, but regardless of this, these concepts reflect deep and durable fault lines in society in the UK, and elsewhere, as they date back to the foundations of social theory in the 19th Century where contrasts were made between rural settled and rooted communities and modern cosmopolitan, mobile, urban communities (Durkheim, 1893; Tönnies, 1887).

This conceptualisation places individual residential mobility at the heart of debates about cultural and political attitudes rather than 'on the side' as a separate issue for analysis. The centrality for migration is now emerging in the literature as can be seen in two examples. Lee, Morris, and Kemeny (2018), analysing the UK EU referendum result, found that there was a statistically significant difference in the voting intentions of those who were resident outside their county of birth as compared with those who had remained there. In the very different geographical context of small-town Northern Iceland, Icelanders who had lived abroad or in the capital region around Reykjavik were more open to out-groups such as immigrants than residents who had spent all their life in the small-town milieu (Bjarnason, Clifford, Shuttleworth, & Meckl, 2019). These observations are suggestive that residential mobility is transformative for individual identities, but these two studies only scratch the surface of the processes and subtleties underlying this. Bjarnason et al. (2019), for instance, use cross-sectional survey data. As they note, it is not possible to deduce whether the experience of residential mobility has made people more open to outsiders, or if more tolerant, trusting and open people are more likely to migrate in the first place. Lee et al. (2018) demonstrate an effect of living in a different county than the one of birth. However, this raises questions about whether shorter distance moves might also change political attitudes, the need to use a more nuanced measure of distance, and if it is migration since birth that is important or if residential mobility over shorter time periods might also have an effect.

The purpose of the paper therefore is to extend the analyses of Lee et al. (2018) and Bjarnason et al. (2019). It does so by seeking to answer the following questions: (1) Has residential mobility an additional and independent effect on political attitudes? It does so by considering whether it is the type of people who move that translates to attitudes or the act of changing address in itself. (2) Can residential mobility have an effect on political attitudes over short time scales? (3) Do moves over *any* distance matter? Or are long-distance moves only important? (4) Is residential mobility an important influence on the attitudes of all age groups, just the young or just the old? We approach these questions by using *Understanding Society* between Waves 3 and 8 with a focus on the Brexit Referendum intended voting question. The next section reviews briefly the literature on the geographical and socio-demographic correlates of the Brexit Referendum result, also considering the roles of values, attitudes and personality, and finally residential mobility as part of this mix. After this, the data and the methods that are used are outlined, followed in the next section by a summary of the key analytical results. Finally, the implications of these results are discussed.

2 | LITERATURE REVIEW

The result of the UK 2016 EU Referendum attracted considerable academic and popular attention not least because of the unexpected victory for Leave. There are three major classes of explanation. These understand the referendum outcomes in socio-demographic terms (Los, McCann, Springford, & Thissen, 2017); as a consequence of differing values (Kaufmann, 2016) or as consequence of group and individual psychologies (Obschonka et al., 2018). These differing perspectives offer contrasting insights, but it seems in many respects that they offer different viewpoints on the same basic electoral phenomenon.

Los et al. (2017) observe that there was a distinct geography to the referendum outcome. In England, some major multicultural cities such as London, Leicester, Liverpool and Manchester voted Remain along with university cities such as Oxford and Cambridge. Outside England, Scotland voted remain as did Northern Ireland, which indicates some role for national identity at the level of the UK. However, within England, with Leave votes in towns and city regions with decayed traditional industries, seaside towns and rural areas, it is not surprising to find that a large proportion of Leave voters were older, less educated and socially conservative, although perhaps with a tradition of Labour voting in the past. It is thus possible to argue, as do Halikiopoulou and Vlandas (2018), that the Leave vote was a response to economic insecurity and failure of the benefits of economic growth to be redistributed. Los et al. (2017) also argue that local economic conditions were important, and in particular the legacy of low qualifications and the loss of manufacturing industry with the Leave vote paradoxically being higher in locales like this which have been the recipients of EU investment. It is also worth noting that local context is also important and can have an independent effect on electoral behaviour over and above individual characteristics (Johnston, Manley, Pattie, & Jones, 2018) so that a graduate in a Leave area is more likely to vote Leave than one in an area where Remain won. However, this should not divert attention away from rural and more affluent Leave voters for whom identity, cultural and political issues may have been more salient in their choice than economic insecurity and indeed the degree to which considerations like national sovereignty were important for less-well off voters. This lies at the heart of arguments about how the referendum result mirrors social class and geography to some extent but in fact cuts across social class, geographies, the Left/Right continuum, families and groups of friends. This is because, some argue, that the main drivers of voting in the referendum were cultural, psychological, about values and identity.

The arguments about how personal values, on a continuum between socially conservative and liberal, cut across Left/Right divides and social class are made by Kaufmann (2016). He contends that economics, geography and demographics are important to some extent but suggests that a parcel of beliefs (e.g., support for capital punishment), social fears (e.g., about immigration) and worries about economic and political control (e.g., over national sovereignty) are part of a Leave voting parcel which tends to be socially conservative, nationalistic, change averse and cautious about demographic difference. It just happens that some voters with these characteristics on

average tend to be older, or less educated, or disadvantaged or living outside major cosmopolitan cities. MacDougall, Feddes, and Doosje (2020) also point to cultural and social attitudes, such as feelings of threat and relative loss, that cut across the wealth/poverty divide along a liberal and socially conservative axis. However, it is Obschonka et al. (2018) who firmly link Leave voting to group and individual psychology. Arguing that it is related to personality traits like anxiety, fear, caution and loss aversion, they suggest that the electoral geography of the referendum can be explained in part by the spatial distribution of neurotic personality traits (see Rentfrow, Jokela, & Lamb, 2015). In support of this, they point to the purchase gained by campaigning that played on fears of immigration and terrorism. This is related explicitly to the Big 5 Personality Model which they suggest has some bearing on political orientation. People low on the Openness dimension, for instance, tend to be socially conservative; those who score highly on it are on average liberal. High Conscientiousness scores and a concern with order are also linked to conservative views.

These interpretations of the 2016 Referendum broadly fall into two main classes—those that emphasise economic factors and those that give primacy to culture and values (and also to psychology). These are contrasting insights, but there is a great deal of crossover between them in the identification of the demographic groups that voted Remain or Leave. The added element to the debate, introduced by Goodhart (2017); Lee et al. (2018) and Bjarnason et al. (2019), is population residential mobility—conceptualised in this paper by internal migration within the UK. This has analytical importance because residential mobility relates to the socially conservative/liberal divide that dates back to the origins of social theory in the early 19th Century and distinction made by writers such as Tönnies and Durkheim amongst others between rural, traditional and immobile communities and cosmopolitan, diverse, mobile and often urban communities with progressive values. Individual personality traits shade into political attitudes and orientations as suggested by Obschonka et al. (2018), but it is known that personal attitudes and identities can change through individual residential mobility, for instance through exposure to diversity (Hudson & Fraley, 2015; Oishi, 2010). Because of these considerations, the finding of Lee et al. (2018) that residence outside county of birth was related to a decreased likelihood of voting Leave was highly interesting especially after controls for the Big 5 and socio-demographic background were made. These findings are supported in a different national context by Bjarnason et al. (2019), who found that a history of personal national and international migration made people more tolerant of immigrants. These studies, however, have some shortcomings. Bjarnason et al. (2019) have no prior measure of attitudes or of personality so as to isolate whether residential mobility itself, or the types of people who were mobile, was key. Lee et al. (2018) do not explore the full range of residential mobility experiences ranging from short to long distance moves, number of address changes and distances moved and this raise questions about whether lifetime mobility is important or whether it is residential mobility at one particular life stage.

These questions are therefore taken up in this paper which seeks to discover if (a) residential mobility, independent of personality and other socio-demographic factors, influenced voting intentions in the Brexit Referendum; (b) if this can happen over short time scales; (c) whether certain types of internal migration are important; and (d) whether the impact of residential mobility is an all-age phenomenon. The data and the means by which these questions are tackled are outlined in the next section.

3 | DATA AND METHODS

The *Understanding Society* longitudinal study is the only suitable dataset to our knowledge which captures information on address changes, distances moved, personality, socio-demographic characteristics and Brexit voting intentions. It covers all age groups and parts of the UK and repeatedly contacts the same people to trace them over a long duration, thereby providing in-depth data over the life course. The information on personality as measured by the Big 5 was captured at Wave 3 (2011–2013), Brexit voting intentions at Wave 8 (2016–2018), hence the focus on Wave 3, and Wave 8, and the changes between these two points in the analytical database which was based on the individual files. The referendum voting question was prospective unlike the retrospective British Election Survey.

The explanatory variables are as follows. Address changes from the previous wave were recorded in each *Understanding Society* wave. These permitted (a) whether at least one address change was made between Waves 3 and 8 to be computed. Additionally, in 2019, data became available for all waves on the distance of move when an address change was made. This was measured in kilometres as the distance between the postcode centroid recorded at time T and time $T-1$. This was used to calculate whether (b) only short-distance moves less than 10 km had been made; (c) at least one address change of between 10 and 50 km had been made; and (d) whether a move of 50 km or more had ever been made. The distance cut-offs are to some degree arbitrary, but they do reflect usage elsewhere in the literature (Champion, Cooke, & Shuttleworth, 2018; McCollum, Ernsten, Feng, & Everington, 2020) where housing moves of equal to or greater than 50 km, for instance, are argued to be associated with fundamental changes in workplace or education whereas those shorter are less likely to lead to a major change of milieu. The other variables selected were the Big Five personality traits of Openness, Conscientiousness, Extraversion, Neuroticism and Agreeableness measured at Wave 3. All traits are orthogonal, so that scoring highly on one does not necessarily predict a score on another. Those scoring high on Openness tend to be intellectually curious and appreciate adventure. Those high on Conscientiousness have a strong sense of duty, self-discipline and control. Extraversion is associated with a breadth of activities and engagement with the external world, whereas Neuroticism is characterised by a range of negative emotions and a low tolerance for stress. Those high in Agreeableness tend to value social harmony and place cooperation above self-interest. These characteristics vary spatially and also influence voting intentions (Obschonka et al., 2018).

Other explanatory variables included geographic region as measured by standard government region; urban/rural residence; sex; economic activity; educational qualification; age; housing tenure and whether the respondent felt their neighbourhood was agreeable, cohesive and if they felt they were similar to the people who lived there and they trusted them. For these four neighbourhood variables of agreeableness, cohesion, similarity and trust, the *strongly agree* and *agree* categories were coded together to create a dummy that could be compared with the remainder (*unsure*, *disagree* and *strongly disagree*). Educational qualifications were collapsed into university-level, school-level and no qualifications; housing tenure into owner occupied, social rented and private rented; and economic activity in self-employment, paid employment, unemployment and economic inactivity. Age was treated as a continuous variable. The explanatory variables were mainly selected from Wave 3. However, wo change variables were used experimentally—(i) gaining a degree between Waves 3 and 8 and (ii) leaving economic inactivity between Waves 3 and 8. The socio-demographic explanatory variables selected were chosen as they were associated with electoral behaviour in other studies of the referendum, the mobility explanatory variables to explore the sensitivity of various kinds of move. Measures of sex and age reveal something of the demography of intending to vote Leave and educational attainment, economic activity, housing tenure and limiting long-term illness say something about social wellbeing, social deprivation and marginalisation (Los et al., 2017). The regional variables capture the macro-spatial variations in attitudes, for example, between England and Scotland, as does the urban/rural variable whereas the neighbourhood variables are useful for understanding marginalisation at a lower spatial scale. Finally, the Big 5 personality traits speak to the factors identified by Rentfrow et al. (2015) and Obschonka et al. (2018) as structuring Britain and influencing attitudes. These variables, including personality, are also correlated with spatial mobility (e.g., Shuttleworth, Cooke, & Champion, 2019; Shuttleworth, Stevenson, Bjarnason, & Finell, 2020), so their inclusion means they act as controls so as to isolate the independent influence of spatial mobility on vote Leave intention.

Standard multivariate analytical techniques were used for the analyses. Because the outcome variable (Leave/Remain) is binary (coded as Leave = 1, Remain = 0), logistic regression was selected as the appropriate technique. However, because *Understanding Society* is a household sample, the Mixed procedure was used in SPSS 27 to allow for its multilevel data structure with individuals nested in households. It also allows for the possibility that some address changes may co-occur (e.g., not be independent). The fixed rather than the random part of the model is the central focus of the analysis; the effect of using a multilevel approach is to give more robust and conservative estimates that account for the data's structure and for move co-occurrence. To adjust for attrition (which is common in survey-based longitudinal studies), a weighting variable for the Wave 8 individual file (h_indinus_lw) provided by *Understanding Society* was used. All results are weighted. The counts for the explanatory and outcome variables are presented in Tables A1 and A2.

4 | RESULTS

Descriptive results, showing the percentage intending to vote Leave, are also presented in Table A1 for the categorical explanatory variables. This overall mean, at 46.3%, is lower than the 51.8% who actually voted Leave in the referendum. This could be a result of bias in the sample, 'shy leavers' who did not want to say they were leavers (the result on the night was a surprise and largely unheralded by opinion polls) or simply that voters did not make a final choice until later. Nevertheless, there can be considerable confidence in the general picture shown by the data. Much lower Leave intentions are apparent in London, Scotland and Northern Ireland and higher in other English regions. There is also the expected gradient by age with older respondents expressing much higher intentions to vote Leave (note: age is modelled later as a continuous variable and is expressed here as a category for tabular simplicity), and also by educational qualification with those with no qualifications being more likely to be Leavers. The relationship between intending to vote Leave and social deprivation in the dataset is reinforced through the patterns by housing tenure and long-term illness where social renters and the ill are more likely to intend to vote Leave. Turning now to spatial mobility, there is a clear gradient from the immobile to those who are in the highest mobility band, ranging from 48.1% Leave intention for non-address changers to 31.4% for those who made at least one move of 50 km or more. This difference of 17 percentage points (pp) is larger than for all other differentials except those for age (24 pp), region (25 pp) and qualification (32 pp). Finally, there are small but statistically significant differences by the Big 5 personality traits captured at Wave 3. Those intending to vote Leave score lower on Agreeableness, Openness and Neuroticism but higher on Conscientiousness and Extraversion.

The analytical results are presented in three stages. Table 1 shows results for all ages, Table 2 for respondents aged 25 and over and Table 3 for those aged 16–24 also with an alternative specification for the same age group adding the change variables 'gained a degree between Waves 3 and 8' and 'left economic inactivity between Waves 3 and 8'. These were considered important to explore given the transitional experiences of this age group. In each table, two model variants are presented, the first which *only* has distance explanatory variables and the second which has distance *plus all* the other explanatory variables described in Table A1. The full model results are presented in full in Tables A3 and A4. Key findings from these tables will be mentioned where necessary. All coefficients that are statistically significant at the 5% level are marked in bold, and central estimates plus lower and upper confidence limits (at the 95% probability level) are shown.

Model 1 in Table 1 shows that respondents who had made any kind of move, relative to those who did not change address between Waves 3 and 8, were less likely to intend to vote Leave (at the 5% significance level). There is a gradient, with the decrease in the Leave intention greater for longer-distant movers than for short-distance movers. Model 2 includes all the other explanatory variables. This modifies the results in interesting ways. It is striking that long-distance movers are still statistically significantly less likely to vote Leave than

TABLE 1 All ages, Model 1, mobility variables only, Model 2, full specification

	All ages, model 1			All ages, model 2		
	Exp (B)	Lower	Upper	Exp (B)	Lower	Upper
Migration variables						
No address change (reference)	1.000			1.000		1.000
Only moved <10 km	**0.845**	**0.756**	**0.947**	1.073	0.943	1.220
At least one move 10 km–50 km	**0.674**	**0.550**	**0.826**	0.878	0.705	1.094
At least one move ≥50 km	**0.576**	**0.464**	**0.714**	**0.731**	**0.580**	**0.920**
Constant	**0.935**	**0.889**	**0.982**	0.598	0.373	0.960
Akaike information criterion	69,981			64,241		

Source: Understanding Society.

TABLE 2 Aged 25 and over, Model 1, and mobility variables only, model 2, full specification

	25 and older, model 1			25 and older, model 2		
	Exp (B)	Lower	Upper	Exp (B)	Lower	Upper
Migration variables						
No address change (reference)	1.000			1.000		
Only moved <10 km	0.898	0.798	1.012	1.047	0.914	1.198
At least one move 10 km–50 km	**0.668**	**0.540**	**0.826**	0.856	0.680	1.076
At least one move ≥50 km	**0.742**	**0.585**	**0.941**	0.942	0.731	1.214
Constant	0.971	0.924	1.019	1.093	0.653	1.827
Akaike information criterion	60,480			55,364		

Source: Understanding Society.

TABLE 3 Sixteen to twenty-four year olds, Model 1; mobility variables only, Model 2; full specification, Model 3, is as Model 2 plus change variables

	16–24 group, Model 1			16–24 group, Model 2			16–24 group, Model 3		
	Exp (B)	Lower	Upper	Exp (B)	Lower	Upper	Exp (B)	Lower	Upper
Migration variables									
No address change (reference)	1.000			1.000			1.000		
Only moved <10 km	1.373	0.098	1.175	1.282	0.770	2.134	1.156	0.691	1.935
At least one move 10 km–50 km	1.087	0.514	0.893	0.883	0.370	2.109	0.813	0.339	1.949
At least one move ≥50 km	**0.270**	**0.135**	**0.539**	**0.254**	**0.114**	**0.567**	**0.285**	**0.127**	**0.639**
Constant	**0.368**	**0.279**	**0.486**	0.071	0.003	1.463	0.231	0.011	5.096
Akaike information criterion	9,934			9,312					

Source: Understanding Society.

non-address changers. Looking at the wider suite of results, there is evidence to support the arguments that the Leave vote had economic and regional roots and also that psychological and attitudinal factors were also important but that spatial mobility was an important part of the mix. Its estimated effect is less than that of region, age across the lifespan, housing tenure and educational qualifications but is greater than the neighbourhood variables and personality. Considering personality, we see that individual Openness has a statistically significant negative effect on planning to vote Leave (as does Agreeableness) but that Conscientiousness and Extraversion have positive effects. These are much as suggested by the literature (Obschonka et al., 2018) with the link made to the liberal/conservative continuum, but it is noteworthy that Neuroticism has no statistically significant effect. Relative to Yorkshire and Humberside, the statistically significant negative effects for London, Scotland, the South-East, Wales, and Northern Ireland are as expected. We find positive significant effects for men, and the same for older people, plus those with limiting long-term illnesses but strong negative effects for respondents with university-level

qualifications. The neighbourhood variables suggest that perceptions of local environment shaped voting intentions. Those who agreed that they lived in an agreeable neighbourhood and in an area where they trusted their neighbours were less likely to intend to vote Leave. This clearly echoes some of the literature (MacDougall et al., 2020; Obschonka et al., 2018) where the issues of fear, security and order are raised, and this, moreover, is related to personality traits like Openness. The coefficient for neighbourhood similarity is positive and significant indicating that those who feel they live in a neighbourhood which is like them were more likely to intend to vote Leave. This again makes sense as traditional non-diverse neighbourhoods especially in rural areas could be a focus for social conservatism.

Tables 2 and 3 are exploratory and seek to examine whether there are differences by life stage. Life stage was partially controlled for by including age in the model. However, the decision to analyse sub-sections of the data by age was made to consider this theme from another perspective. It is known not only well-known that migration rates peak for younger people (see, e.g., Findlay, McCollum, Coulter, & Gayle, 2015; Shuttleworth et al., 2019) but that motives for migration vary through the lifecycle with the spatial mobility of young people being associated particularly with moves from the parental home, higher education and employment, whereas for older people, housing, environmental and family factors are more prevalent. This analysis was also entertained because of the 'impressionable years' hypothesis that young people are shaped strongly be early experiences (Bell et al., 2018) but also for the pragmatic reason that the lives of younger people aged 16–24 tended to be dominated by higher education associated with longer-distance moves. They are more spatially mobile than older age groups (see, e.g., Champion et al., 2018), partly because of higher education but also because the transition into adult life leads to more address changes over longer distances for other reasons. This ought to have been modelled by the economic inactivity variable which includes students in the reference category but also to some extent by the highest qualification variable with having a degree. Table 2 shows that for those aged 25 and older, the longer-distance mobility variables without controls are statistically significant. However, when other control variables are entered, these migration variables become statistically insignificant. The full model in Table A3 is not fully discussed for reasons of brevity but in essence is the same as the one for all ages with only minor differences such as that related to paid employment. Table 3 for 16–24 year olds is, however, very different. Only long-distance moves are statistically (and negatively) significant, and this remains so even after other controls have been applied. There are some interesting differences between the over 25 and all-age models associated with only age and social housing tenure being positively associated with intending to vote Leave and Openness, living in Scotland, and moves of 50 km or more negatively related. The results in Table 3 are elaborated with the addition of two change variables—gaining a degree between, and leaving economic inactivity, between Waves 3 and 8. Moves of 50 km remain statistically significant and negative as is gaining a degree (see Table A4). The statistical significance of *actually having* a degree at Wave 3 is less clear for this age group. In the model absent the change variables, it is statistically insignificant but regains significance with the addition of the statistically significant 'gain a degree variable'. Given that it is important for older groups, having a degree is appears to have a major effect on political attitudes, but there also seems to be a processual effect of gaining a degree for this part of the population. Perhaps, there is something intrinsic to having a degree that is shapes attitudes, but equally, there may be something about the experience of higher education which brings young people from different regions and countries together that is also of value.

5 | DISCUSSION

The first question which the paper sought to answer concerned the extent to which residential mobility had an independent and additional effect on political orientation over and above personality traits and socio-demographic characteristics. In the analysis of Bjarnason et al. (2019), it is unclear whether it is the experience of migration itself or the types of people who migrate which is the key influence on positive attitudes towards immigrants. If the latter case is true, this selection bias means migrants on average score highly, for instance, on Openness (and so are more liberal) but also tend to fall into more educated and younger demographics and more mobile groups. The literature suggests that personality is associated with migration with people who have high Openness scores tending to be more migratory especially over longer distances (Jokela, 2009; Shuttleworth et al., 2020; Tabor, Milfont, & Ward, 2015) in contrast to those who score higher on Conscientiousness. Confirming these Finnish and New Zealand findings, and using the same *Understanding Society* data as this paper, it was found that Openness was positively related to migratory moves of more than 50 km whereas Conscientiousness was negatively related (Shuttleworth et al., 2020). This indicates that there seems to be a 'migration package' which demographically consists of younger and more educated people but who are also in terms of personality open to new experiences because of higher scores on Big 5 personality traits such as Openness. This is a 'chicken and egg' situation: is it migration that makes people less likely to vote Leave or is it their already-existing personality and socio-demographic characteristics?

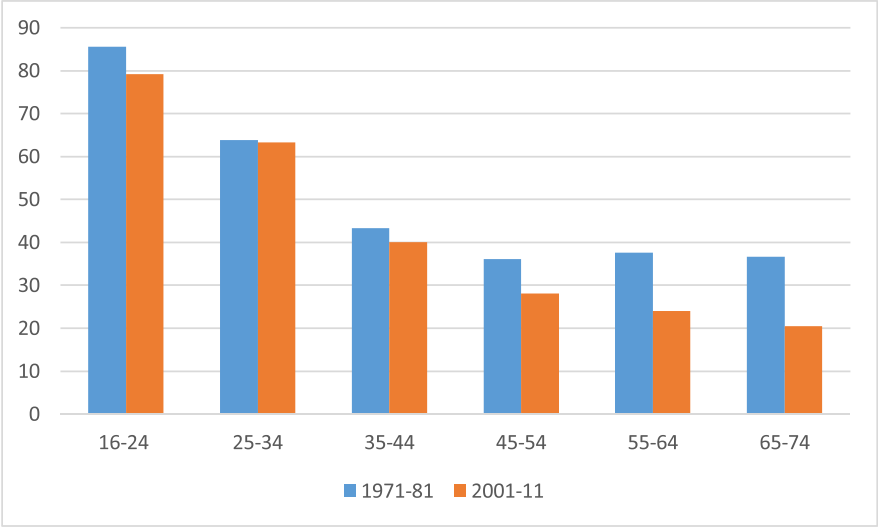
The evidence from our analysis clearly suggests that residential mobility does have an independent and additional effect on political attitudes as measured by voting intentions in the EU Referendum after controlling for personality, region and a range of neighbourhood and individual factors at Wave 3. Residential mobility between Waves 3 and 8 seems to shape voting intentions in the EU Referendum as captured in Wave 8 even after controlling for these contextual variables. This confirms the finding of Lee et al. (2018) with regard to migration. There is thus something about the experience of changing address and changing place of residence that shapes world views and bears on identity and attitudes. The search this points towards the personal impact of experience of diversity and the breaking of ties in one place, and their renewal elsewhere (Oishi, 2010). This can change attitudes and modify behaviour. Previous, before Wave 3, residential mobility may have modified personality with, for instance, the

experience of youthful mobility making some older respondents score more highly on Openness when measurements were taken in Wave 3 (ages then were from 16 to 95). We return to this issue later.

The second question concerns the timescales over which residential mobility can influence attitudes. Lee et al. (2018) identify an independent effect of living in a different county than the birth county. This measure of migration from birthplace is a lifetime indicator. For older respondents, it might be measured over 60 years, for the younger for 20 years, for example. It also misses people who might have been highly spatially mobile but who then return to their birth county. In contrast to this, the findings of our analysis suggest that residential mobility can have an independent effect on political attitudes over a timespan of less than a decade as is the case between Waves 3 and 8. This expands on the work of Lee et al. (2018) and indicates it is worthwhile investigating how migration influences attitudes over relatively brief time periods.

The third question as to whether moves over any distance matter also seeks to build upon the findings of Lee et al. (2018). The lifetime metric of living in a different county to the county of birth is very broad and is relatively insensitive. Short-distance moves that happen to cross a boundary may be shorter, for instance, than longer-distance internal moves from one side of a county to the other. It raises questions as to whether it is only inter-county moves that are important or whether short-distance moves, for example, might also be significant. There are grounds for expecting this latter situation to be true. Oishi (2010), for example, notes that moving between different neighbourhoods can alter identities. Furthermore, most migratory moves associated with residential changes are over short distances with a strong distance decay (see, e.g., McCollum et al., 2020). In answering this question, our results are intriguing. The model which just includes the migration distance variables shows that any moves over any distance, relative to the residentially immobile, decreases the chances of intending to vote Leave. However, once controls are made for personality, neighbourhood context and relevant individual characteristics, it is apparent that only those who make at least one move of 50 km or more are less likely to vote Leave and there is no clear effect for shorter moves. This suggests that it is long-distance moves (moves of 50 km or more are more likely to be for employment or education reasons; Niedomysl, 2011) which have the greatest liberalising effect. Other distance measures were used to test for robustness. Using the total distance moved (not tabulated), instead of the distance categories, there was a similar negative effect to the reported analyses. Substituting the distance categories with a measure of regional change, again the same negative impact on Leave vote intentions was observed. Finally, the total number of moves between Waves 3 and 8 was also used as an explanatory variable (analysis not tabulated), and it was found that an increased number of address changes was associated with a decreasing Leave vote intention.

The fourth and final question aimed to was whether residential mobility was an important influence on the voting intentions of all age groups. An analysis was therefore undertaken on those aged 25 or more and those aged 16 to 24 at Wave 3. The reason for this was to separate the age group most influenced by higher education from older respondents but also to concentrate on the 16–24 age group which is key for residential mobility. This demographic was also a new cohort, and there was therefore less chance for its attitudes and Big 5 traits to have been modified by previous migratory experiences before Wave 3. In this way, the youngest cohort provides a more rigorous test of the transformational effect of migration and personality with less chance of previous migration affecting it. The results are striking. They indicate that the effects of residential mobility on voting intentions are largely experienced and driven by these younger people who, aged 16–24 in Wave 3, would be aged 21–29 in Wave 8. One reason for this is that residential mobility increases the possibility of creating new social relationships. Amongst young people especially, this may affect their personality development (Zimmerman & Neyer, 1972), and here, the idea of 'self-concept clarity' could be



Source: Calculated from Shuttleworth et al 2019 (from ONS LS)

FIGURE 1 Address change rates by age group 1971–1981 and 2001–2011. Source: calculated from Shuttleworth et al. (2019), from ONS LS

useful. This means that when you move, you better learn who you are. This is especially important for young people who are just getting to know themselves as their personalities develop. Self-concept clarity facilitates adjustment, and people with high self-concept clarity are more equipped to face threats (Fan, Wang, & Jiang, 2018).

For respondents aged 25 and over, the residential mobility variables have no statistically significant effect after all other variables are included in the model. For 16–24 year olds, there remained a clear statistically significant negative effect for moves of more than 50 km, and this remains when the change variables of gaining a degree and leaving economic inactivity between Waves 3 and 8 are included although gaining a degree has a statistically significant negative effect on the intention to vote Leave (see Table A4). These results indicate that residential mobility is important for young people. This fits in with the 'impressionable years' hypothesis in which narrative life stories begin to be constructed and personal identities to rapidly evolve (Bell, Kandler, & Riemann, 2018; McLean, 2005). It also seems that residential mobility, at least partly associated with entry to and exit from higher education, appears to be a formative experience and, interestingly, that gaining a degree is important as is having a degree (which may well have a lifelong residual effect that lingers after the major changes experienced in the late teens and twenties life stages). The findings for personality and residential mobility are also important. They are far more likely to represent the situation *de novo* than would be the case of a Wave 3 respondent in their 40s, for example, who are far more likely to have experienced earlier and unmeasured life and migration events.

6 | CONCLUSION

The paper's findings present robust evidence that the experience of residential mobility, and especially moves over greater distances, has an independent and additional effect on political and cultural attitudes. In this case, these attitudes are measured by Brexit voting intention in the 2016 EU Referendum, and they thus directly corroborate and add to the work of Lee et al. (2018). Indirectly (because using a different but related measure of attitude towards immigrants), they also corroborate the analysis of Bjarnason et al. (2019) which showed that individuals who had migrated were more likely to have more liberal and trusting attitudes towards out-groups. This suggests that residential mobility should be taken more into account in electoral and attitudinal studies and that population and political geographies have another area of overlap. Two areas for development are (a) in understanding the experience of residential mobility in terms of experiences of diversity, encounter and identity change and (b) in interpreting residential mobility in the context of life histories, and the construction of narrative stories of self. This will require cross-disciplinary work.

It is also vital to place these results against the background of broader demographic and social changes. In this context, one of the most salient observations is that there has been a long-term decline in internal migration rates in the constituent countries of the UK dating from the 1970s, which has overridden cyclical patterns of up and down associated with the business cycle (Shuttleworth et al., 2019). In this trajectory, the UK is not unique because the USA and Australia, amongst other countries, have followed a similar path (Champion et al., 2018). This is illustrated for England and Wales in Figure 1 where a migration decline is apparent across almost age groups and even for 16–24 year olds despite the expansion of higher education in the last decades of the 20th century. Given the findings of this paper, and the apparently liberalising effects of residential mobility, the migration decline, especially for this formative youth age group, could have hitherto unexpected later structural political and cultural impacts with the UK population becoming more immobile, more localised and hence more socially conservative. The analysis also hints at the key importance of higher education as a formative experience for 16–24 year olds. There are good economic arguments to be made for this investment in terms of human capital and labour supply. These results also suggest that there are good social policy reasons for higher education as a life experience which involves diversity, mixing, spatial mobility and drawing on wider experiences than necessarily are available for those who remain at home and less influenced by broader contexts.

DATA AVAILABILITY STATEMENT

The data for the analysis was from Understanding Society, University of Essex, Institute for Social and Economic Research (2019). Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009. [data collection]. 12th Edition. It is freely available from the UK Data Service. SN: 6614, http://doi.org/10.5255/UKDA-SN-6614-14.

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How to cite this article: Shuttleworth I, Finell E, Bjarnason T, Stevenson C. Individual residential mobility, immobility, and political attitudes: The case of Brexit voting intentions in the 2016 UK EU Referendum. *Popul Space Place*. 2021;27:e2444. https://doi.org/10.1002/psp.2444

APPENDIX A.

TABLE A1 Categorical explanatory and outcome variables

Categorical variables	Count	Percentage	Percentage vote leave intention
Outcome variable			
Intend to vote leave	6,723	46.3	
Intend to vote remain	*7,807*	*53.7*	
Explanatory variables			
Sex			
Male	6,957	47.9	48.0
Female	*7,573*	*52.1*	*44.6*
Age			
18–24	1,598	11.3	35.4
25–34	2,535	18.0	38.1
35–44	2,495	17.7	44.5
45–54	2,657	18.8	47.9
55–64	2,300	16.3	51.6
65 plus	2,537	18.0	59.0
Region			
Northeast	647	4.45	49.2
Northwest	1,612	11.09	49.8
Yorkshire and the Humber	*1,340*	*9.22*	*51.8*
East midlands	1,042	7.17	52.3
West midlands	1,286	8.85	51.6
East of England	1,374	9.46	50.6
London	1,536	10.57	37.8
Southeast	2,054	14.13	44.6
Southwest	1,335	9.19	51.7
Wales	703	4.84	45.2
Scotland	1,212	8.34	28.8
Northern Ireland	389	2.68	39.1
Urban/rural			
Urban area	*11,313*	*77.86*	*46.1*
Rural area	3,216	22.13	46.7
Economic activity			
Self-employment	1,066	7.30	46.1
Paid employment	7,357	50.60	42.2
Unemployed	777	5.30	50.3
Inactive	*5,347*	*36.80*	*51.3*
Qualification			
University qualifications	5,299	36.60	31.6
School qualifications	7,399	51.10	52.8
No qualification	*1,831*	*12.30*	*63.6*
Neighbourhood variables			
Agreeable neighbourhood	8,321	61.70	45.8
Cohesive neighbourhood	1,407	10.40	47.0
Similar to neighbourhood	8,101	60.10	48.4
Trust people	9,357	64.90	44.7

TABLE A1 (Continued)

Categorical variables	Count	Percentage	Percentage vote leave intention
Friends different race	1,173	8.10	45.1
Limiting long-term illness			
No illness (reference)	9,663	66.5	43.1
Illness	4,860	33.5	52.6
Housing tenure			
Social renter	2,365	16.30	56.9
Private renter	1,862	12.80	40.3
Owner occupier	*10,301*	*70.90*	*44.9*
Residential mobility			
No address change	*10,538*	*72.50*	*48.1*
Change address W3-W8	3,992	27.47	41.4
Only moves <10 km	3,004	20.70	43.1
At least one move 10–50 km	781	5.40	37.5
At least one move ≥50 km	706	4.90	31.4

Note. Reference categories are marked in *italics*.

TABLE A2 Non-categorical explanatory variables

	Count	Min	Max	Mean	SD	Remain	Leave
Agreeableness	13,484	1	7	5.59	1.04	5.61	5.57
Conscientiousness	13,482	1	7	5.43	1.10	5.40	5.46
Extraversion	13,485	1	7	4.56	1.30	4.54	4.59
Neuroticism	13,485	1	7	3.59	1.44	3.63	3.55
Openness	13,473	1	7	4.57	1.31	4.70	4.42
Age	14,529	16	95	45.87	17.80		

TABLE A3 Intention to vote 'Leave' in UK Brexit referendum, all population and over 25s and all explanatory variables

	All population			25 and older		
Variables	**Exp(B)**	**Lower**	**Upper**	**Exp(B)**	**Lower**	**Upper**
Migration variables						
No address change (*reference*)	1.000			1.000		
Only moved <10 km	1.073	0.943	1.220	1.047	0.914	1.198
At least one move 10 km–50 km	0.878	0.705	1.094	0.856	0.680	1.076
At least one move ≥50 km	**0.731**	**0.580**	**0.920**	0.942	0.731	1.214
Big 5 personality traits						
Agreeableness	**0.928**	**0.886**	**0.973**	**0.939**	**0.895**	**0.986**
Conscientiousness	**1.086**	**1.039**	**1.136**	**1.084**	**1.035**	**1.135**
Extraversion	**1.079**	**1.041**	**1.118**	**1.067**	**1.028**	**1.107**
Neuroticism	0.987	0.955	1.020	0.975	0.943	1.008
Openness	**0.888**	**0.856**	**0.922**	**0.904**	**0.870**	**0.939**
Geographical variables						
Yorkshire and Humberside (*reference*)	1.000			1.000		
London	**0.612**	**0.487**	**0.770**	**0.647**	**0.514**	**0.813**

(Continues)

TABLE A3 (Continued)

	All population			25 and older		
Variables	**Exp(B)**	**Lower**	**Upper**	**Exp(B)**	**Lower**	**Upper**
Northeast	0.876	0.672	1.142	0.947	0.727	1.233
Northwest	0.936	0.758	1.156	0.950	0.770	1.172
East midlands	1.130	0.898	1.421	1.183	0.940	1.488
West midlands	0.976	0.780	1.223	1.035	0.826	1.296
East of England	0.994	0.801	1.234	1.033	0.832	1.281
Southeast	**0.778**	**0.637**	**0.950**	**0.792**	**0.649**	**0.966**
Southwest	1.040	0.839	1.289	1.071	0.865	1.327
Wales	**0.720**	**0.548**	**0.944**	**0.715**	**0.544**	**0.939**
Scotland	**0.344**	**0.271**	**0.436**	**0.364**	**0.288**	**0.462**
Northern Ireland	**0.602**	**0.421**	**0.862**	**0.644**	**0.448**	**0.924**
Urban (*reference*)	1.000			1.000		
Rural	0.957	0.853	1.074	0.963	0.860	1.079
Individual variables						
Female (*reference*)	1.000			1.000		
Male	**1.271**	**1.162**	**1.391**	**1.297**	**1.184**	**1.422**
Economically inactive (*reference*)	1.000			1.000		
Self employed	1.152	0.961	1.380	0.960	0.798	1.156
Paid employed	1.045	0.938	1.163	**0.848**	**0.751**	**0.957**
Unemployed	1.034	0.822	1.301	1.047	0.813	1.346
No qualifications (*reference*)	1.000			1.000		
University qualifications	**0.413**	**0.348**	**0.490**	**0.389**	**0.328**	**0.461**
School-level qualifications	0.911	0.776	1.071	0.913	0.778	1.072
No limiting illness (*reference*)	1.000			1.000		
Limiting long-term illness	**1.196**	**1.085**	**1.319**	**1.160**	**1.052**	**1.280**
Age at Wave 3	**1.020**	**1.017**	**1.024**	**1.011**	**1.007**	**1.016**
Neighbourhood and housing						
Agreeable neighbourhood	**0.864**	**0.777**	**0.961**	**0.878**	**0.788**	**0.979**
Cohesive neighbourhood	0.950	0.824	1.096	0.951	0.825	1.098
I am similar to neighbourhood	**1.153**	**1.040**	**1.279**	**1.135**	**1.021**	**1.261**
Trust people in neighbourhood	**0.859**	**0.772**	**0.955**	**0.831**	**0.745**	**0.927**
Friends different race	1.050	0.889	1.241	1.067	0.898	1.268
Owner occupier (*reference*)	1.000			1.000		
Social renter	**1.610**	**1.388**	**1.867**	**1.452**	**1.247**	**1.691**
Private renter	1.093	0.930	1.284	0.939	0.794	1.109
Constant	**0.598**	**0.373**	**0.960**	1.093	0.653	1.827
Akaike information criterion	64,241			55,364		

Source: Understanding Society.

TABLE A4 Intention to vote 'Leave' in UK Brexit Referendum, all population, all explanatory variables and population aged 16–24

	16–24 year olds			16–24 year olds plus change variables		
Variables	**Exp(B)**	**Lower.**	**Upper**	**Exp(B)**	**Lower.**	**Upper**
Migration variables						
No address change (reference)	1.000			1.000		
Only moved <10 km	1.282	0.770	2.134	1.152	0.688	1.929
At least one move 10 km–50 km	0.883	0.370	2.109	0.820	0.342	1.965
At least one move ≥50 km	**0.254**	**0.114**	**0.567**	**0.289**	**0.129**	**0.649**
Big 5 personality traits						
Agreeableness	0.841	0.679	1.041	0.815	0.656	1.011
Conscientiousness	0.883	0.706	1.104	0.899	0.717	1.128
Extraversion	1.164	0.962	1.408	1.160	0.957	1.406
Neuroticism	1.057	0.890	1.256	1.059	0.891	1.259
Openness	**0.822**	**0.684**	**0.989**	0.843	0.699	1.017
Geographical variables						
Yorkshire and Humberside (reference)	1.000			1.000		
London	0.427	0.142	1.282	0.471	0.156	1.423
Northeast	0.482	0.126	1.846	0.557	0.142	2.185
Northwest	1.186	0.403	3.483	1.324	0.447	3.923
East midlands	0.699	0.220	2.214	0.740	0.232	2.358
West midlands	0.997	0.336	2.958	1.068	0.359	3.177
East of England	1.202	0.396	3.647	1.387	0.454	4.236
Southeast	0.965	0.339	2.744	1.002	0.351	2.859
Southwest	1.393	0.457	4.243	1.618	0.528	4.957
Wales	0.988	0.272	3.594	1.050	0.287	3.843
Scotland	**0.220**	**0.059**	**0.820**	**0.245**	**0.066**	**0.915**
Northern Ireland	0.407	0.081	2.035	0.408	0.080	2.075
Urban (reference)	1.000			1.000		
Rural	1.232	0.634	2.392	1.291	0.662	2.520
Individual variables						
Female (reference)	1.000			1.000		
Male	1.146	0.710	1.852	1.105	0.677	1.805
Economically inactive (reference)	1.000			1.000		
Self employed	0.642	0.098	4.228	0.388	0.058	2.591
Paid employed	1.009	0.558	1.822	0.833	0.451	1.540
Unemployed	0.448	0.191	1.051	0.343	0.144	0.819
No qualifications (reference)	1.000			1.000		
University qualifications	0.408	0.097	1.726	**0.165**	**0.035**	**0.772**
School-level qualifications	1.214	0.341	4.324	0.630	0.165	2.403
No limiting illness (reference)	1.000			1.000		
Limiting long-term illness	1.635	0.862	3.099	1.427	0.749	2.720
Age at Wave 3	**1.165**	**1.044**	**1.299**	**1.176**	**1.053**	**1.313**
Neighbourhood and housing	1.000			1.000		
Agreeable neighbourhood	0.709	0.426	1.179	0.701	0.419	1.173
Cohesive neighbourhood	0.492	0.197	1.226	0.472	0.188	1.183
I am similar to neighbourhood	1.680	0.986	2.861	**1.736**	**1.014**	**2.970**
Trust people in neighbourhood	1.023	0.625	1.673	0.982	0.597	1.615
Friends different race	0.844	0.383	1.862	0.917	0.414	2.028

(Continues)

TABLE A4 (Continued)

	16–24 year olds			16–24 year olds plus change variables		
Variables	**Exp(B)**	**Lower.**	**Upper**	**Exp(B)**	**Lower.**	**Upper**
Owner occupier (*reference*)	1.000			1.000		
Social renter	**2.203**	**1.174**	**4.134**	**1.895**	**1.003**	**3.581**
Private renter	1.845	0.937	3.632	1.632	0.825	3.228
Change variables Waves 3 to 8						
Gain degree				**0.336**	**0.187**	**0.602**
Leave inactivity				0.681	0.395	1.176
Constant	0.231	0.011	5.096	**0.336**	**0.187**	**0.602**
Akaike information criterion	9,312			9,361		