Identity, immigration, and subjective well-being: why are natives so sharply divided on immigration issues?

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Abstract

We put forward differences in the form of national identity across natives as a key mechanism explaining the sharp public divide on immigration issues. We show that inflows of migrants into local areas can be harmful for the self-reported well-being of natives, but this is only true for natives who self-identify with an ethnic form of national identity. On the other hand, we provide some evidence to suggest that immigration may be utility enhancing for natives with a civic form of national identity. We also show how differences in national identity significantly predict voting preferences in the UK referendum on European Union membership where concern with immigration issues were a salient factor. Drawing on identity economics, our proposed explanation is that for natives with an ethnic form of national identity, any positive economic benefits associated with immigration may not be enough to outweigh losses in identity-based utility.

JEL classifications: J1, I31

1. Introduction

In the UK, a majority of people voted to withdraw from the EU where sentiments regarding 'taking back control' of national borders were a key predictor of the public vote (Goodwin and Milazzo, 2017). Similar divisions on the topic of immigration are evident in the USA where former President Donald Trump promised to 'build a wall' between the USA and Mexico. Immigration has also been shown to enhance electoral support for far-right political candidates and may even negatively influence support for far-left ones (Barone *et al.*, 2016; Edo *et al.*, 2019). A natural question to ask is why are people so sharply divided on immigration issues? Why does immigration generate such strong political reactions? In this study, we put forward differences in the form of national identity across natives as an important factor that can help explain these sharp divisions.

Perhaps the most common outcome variable when it comes to assessing the welfare consequences of immigration is wages. Focusing merely on labour market outcomes offers limited guidance, however, when it comes to understanding anti-immigration sentiment. This is because while there is some evidence to suggest that there may be some modest

negative impacts in the short run (see Borjas, 2003), the general consensus is that immigration has relatively benign impacts on both the employment outcomes and wages of natives (e.g. see Portes, 2018; Crown *et al.*, 2020; Tabellini, 2020). Considering crime, Gunadi (2021) outlines how despite possessing characteristics usually associated with crime, undocumented immigrants were significantly *less* likely to be incarcerated than US natives and similarly inflows of undocumented migrants were not significant predictors of property and violent crime. It is also notable that migrants are typically found to make a substantive net positive fiscal contribution (Dustmann, *et al.*, 2010; Dustmann and Frattini, 2014). Finally, while there is little doubt that immigration would positively influence aggregate GDP, there is also some recent evidence emerging which suggests that migration flows have a positive impact on GDP per capita (Boubtane *et al.*, 2016).

Despite this evidence suggesting that immigration has little by way of any negative impacts on the economic welfare of natives, we posit that immigration could still be a source of disutility if migrants are perceived as a threat, irrespective of whether this is true or not. Racial threat theory would, for instance, suggest that migrants will be perceived by natives as being in competition for scarce resources and thus a threat to their economic status. Another important factor highlighted when it comes to understanding anti-immigration sentiments relates to cultural, as opposed to economic threat perceptions (see Hainmueller and Hopkins, 2014 for a review of this literature). As evidence of the importance of cultural threat perceptions, a number of recent studies have shown that what is principally important when it comes to predicting vote share for anti-immigration candidates or parties is not the actual number of migrants, but rather the ethnic composition (Barone *et al.*, 2016; Edo *et al.*, 2019).

Therefore, we know that perceived as opposed to actual economic and/or cultural threat perceptions are likely to be an important factor behind anti-immigration sentiments. The question we pose is why does immigration generate such a strong negative reaction for some people, whereas for others, it appears to matter little if at all? What lies behind this significant heterogeneity in attitudes across the population? Here we offer up national identity and draw on the identity economics framework popularized by Akerlof and Kranton (2000) as a useful framework for helping us better understand and explain these sharp divisions. In Section 3, we more formally develop this hypothesis but for now, we simply note that our argument rests on the idea that national identity and, in particular, the form of national identity that is dominant will predict the degree to which natives perceive migrants as belonging to an 'outgroup'. We suggest that this, in turn, will shape the degree to which (if it does at all) exposure to inflows of migrants into local areas will diminish identity-based forms of utility.

In order to demonstrate the importance of national identity, we principally rely on an assessment of the degree to which differences in the form of national identity across natives can predict the impact of immigration on subjective well-being. In a supplementary test, we also examine its influence on voting preferences in a referendum where immigration was a salient factor, namely the UK referendum on EU membership. Taken together, our results show how differences in the form of national identity across natives significantly predict how they *feel* in terms of their subjective well-being when faced with inflows of migrants into their local area, and also how they *behave* as reflected by their voting preferences in the UK referendum on EU membership.

Considering national identity, within the literature to date, the two most common forms identified are 'ethnic' and 'civic'. Individuals with an ethnic form typically place a great deal of importance on characteristics such as ancestry and descent as for them these are key criteria for national identification (Heath and Tilley, 2005; Reeskens and Hooghe, 2010). On the other hand, for those with a civic form, respect for political institutions and laws of the state is what is principally important and ancestry is much less of a concern. The UK is an ideal setting to examine the importance of differences in national identity in explaining the

sharp public divide when it comes to immigration issues as first, both forms of national identity are common and so we have a good deal of variation across people. Secondly, we have a large-scale longitudinal survey in which we are able to uniquely divide respondents into ethnic and civic identity sub-groups based on whether they feel more 'English' or 'British' (we discuss this categorization in more detail in the following section). In keeping with an ethnic conceptualization of national identity, people who identify as 'English' have been shown to regard ancestry as the key criterion when it comes to identifying who 'belongs' to the nation (Heath and Tilley, 2005). In contrast, a 'British' form of national identity has been shown to be more in keeping with a civic form, namely one that immigrants can acquire through respect for political institutions and laws of the state (Tilley *et al.*, 2004; Ford *et al.*, 2011).

In addition to our interrogation of the importance of differences in the national identity of natives, a further novel feature of our work is our examination of subjective indicators of well-being, namely mental health and life satisfaction. In looking to explain anti-immigration sentiments, the dependent variable in much of the existing literature has generally been questionnaire items related to attitudes towards immigration policy, assessments of migrants' likely economic impact, and/or vote share for anti-immigration candidates. Our use of subjective indicators of well-being should be a useful supplement to this work as it can be seen as a more direct test as to the impact of immigration for native's welfare. It can also be seen as in keeping with an emerging literature in economics that has shown the value of using self-reported indicators of well-being as a proxy measure for individual welfare or utility (see Stutzer and Frey, 2010).

In contrast to the rich and varied literature concerned with objective outcomes, research testing the impact of immigration on native's subjective well-being is sparse. The first study that we are aware of that explored this relationship using longitudinal data, thus more reliably allowing us to disentangle the impact of immigration from other spatial correlates, is that by Akay *et al.* (2014). This novel study identified the impact of immigration on the life satisfaction of German natives through an examination of spatial correlations between changes in the share of migrants living in local areas and changes in individuals' life satisfaction over 11 years (1998–2009). Their analysis was focused on individuals aged 16–64 years and they observed a positive association between migrant share and life satisfaction. A striking pattern observed in this study is that the estimated positive impacts were concentrated in regions with intermediate (as opposed to low or high) levels of assimilation. Akay *et al.* (2017) using the same dataset and methodology as Akay *et al.* (2014) find that local-level ethnic diversity is also positively associated with the life satisfaction of German natives. These effects were found to be driven by younger cohorts (<50), and the estimated positive impact of ethnic diversity was also stronger for groups that are culturally closer to Germany.

Building on these influential studies, using similar methodologies but different metrics of well-being, both Howley *et al.* (2020) and Ivlevs and Veliziotis (2018) examined the impact of immigration for the subjective well-being of UK natives. Howley *et al.* (2020) report a small negative association between immigration (changes in aggregate numbers across local areas) and the subjective well-being of natives as captured by the General Health Questionnaire but these negative impacts were largely concentrated on older and poorer cohorts. Ivlevs and Veliziotis (2018) looked at the period between 2003 and 2008 in the UK and find that following the EU enlargement in 2004, increases in the share of migrants across local authority areas were associated with a decrease in life satisfaction among older, unemployed, and lower-income people, but an increase in life satisfaction among younger and higher-income individuals. A common finding across both of these studies is that at the population level, any main effects are small and in the case of Ivlevs and Veliziotis (2018) not statistically significant. Looking across Europe, O'Connor (2020) using cross-country variation demonstrated that immigrant population shares were not significantly associated with natives' life satisfaction across 28 European countries.

A number of reasons have been put forward as to why immigration could affect the subjective well-being of natives. One argument highlighted by Akay *et al.* (2014) relates to impacts on local labour markets. A priori, immigration could lead to an expansion in aggregate demand thus decreasing unemployment and in turn increasing the subjective well-being of natives, or inflows of migrants might lead to lower wages and less employment opportunities if migrants are a source of competition. As described earlier, the general consensus is that immigration has relatively benign impacts on local labour markets (e.g. see Portes, 2018; Crown *et al.*, 2020; Tabellini, 2020) and in keeping with this, Akay *et al.* (2014) document how the local labour market does not appear to be an important factor in the relationship between immigration and the subjective well-being of German natives.

Even if immigration does not impose economic costs (such as negative impacts on local labour markets) it could still, however, be a source of psychological distress for some natives based on the *belief* that migrants are an economic threat, irrespective of whether this is true or not. In support of this premise, Howley *et al.* (2020) document that in times of high economic growth, there is no significant relationship between immigration and the subjective well-being of UK natives, but the relationship is negative and more notable in times of economic stress (e.g. when GDP is comparatively low).

Relative to existing research, a novel feature of our study is that we look at the importance of national identity in predicting the relationship between immigration and the subjective well-being of natives. For some natives, we suggest that immigration may be detrimental to well-being, but for others, we suggest it may be utility enhancing and so any main population-level impact may mask considerable heterogeneity, according to patterns of attachment to national identity. This can explain why, at the population level, any negative impacts are often small, but we still observe significant support for individuals and parties with anti-immigration positions. An additional advantage of our analysis relative to prior work is that we have two distinct outcome measures at our disposal, namely mental health and life satisfaction. Additionally, we test the sensitivity of our baseline person fixed effects estimates to a 'shift-share' instrumental variable approach which should mitigate any endogeneity concerns, such as 'unhappy' natives choosing to move from areas with a lot of migrants. With this approach, following the framework developed by Altonji and Card (1991), we derive a predicted immigration value based on the settlement patterns of past migrants to serve as an instrument for current inflows.

This article is structured as follows. In the next section, we provide a brief overview of key differences between ethnic and civic forms of national identity and discuss our use of 'British' and 'English' as markers for ethnic and civic forms of national identity. This is followed by a discussion of identity economics as we use this as a framework through which we can develop a testable hypothesis relating to the role of national identity in predicting the relationship between immigration and the subjective well-being of natives. Methods and results follow before concluding with a discussion of our main findings.

2. Ethnic versus civic forms of national identity

Following the pioneering work of Kohn (1944), scholars commonly make a distinction between two distinct forms of national identity. This distinction relates to ethnic and civic dimensions but has also been commonly phrased as Eastern versus Western nationalism and cultural versus political. This dichotomy was systematized by Kohn when describing differences between Western, political conceptions of national identity typically associated with, for example, France and an Eastern genealogical type epitomized by Germany (Tilley *et al.*, 2004; Asari *et al.*, 2008). The ethnic form of national identity is associated with characteristics that are principally fixed at birth or during early socialization (Heath and Tilley, 2005). Shared ancestry and descent are the key criteria and as such, membership is not something that can be acquired by immigrants (Heath and Tilley, 2005;

Reeskens and Hooghe, 2010). Rather than ancestry, for people with a civic form, greater importance is placed on political factors such as respect for political institutions and laws of the state (Heath and Tilley, 2005; Ford *et al.*, 2011).

A common assumption has been that many countries fall neatly into an ethnic versus civic dichotomy. Recent evidence suggests, however, that it is far too simplistic to assume that nations fall neatly into an ethnic versus civic dichotomy (Shulman, 2002; Kunovich, 2009). This heterogeneity is reflected in the UK with many people holding different forms of national identity (Cohen, 1995; Tilley *et al.*, 2004). The two most common self-reported national identities in the UK are *English* and *British* (albeit it is also common for people to identify as both) and these partly reflect the ethnic versus civic distinction. In support of this, survey evidence suggests that people who identify as *English* have a distinctive 'ethnocentric' character and set clear boundaries against outsiders, and place an emphasis on ancestry as a criterion for national belonging (Curtis and Heath, 2000; Heath and Tilley, 2005). Contrastingly, a *British* identity has been shown to be related with more civic minded and open tendencies and one that places much less importance on ancestry (Heath *et al.*, 1999). It is reflective of a more inclusive form of national identity and one which immigrants can acquire through respect for political institutions and upholding the laws of the state (Tilley *et al.*, 2004; Ford *et al.*, 2011).

It is of course an oversimplification to suggest that people will only think of themselves as exclusively *English* or exclusively *British*. Indeed, there is much evidence to suggest that people in the UK often hold dual identities (Tilley *et al.*, 2004). Our contention is not that people who identify as *English* will not hold civic conceptions such as respect for political institutions important; rather our argument is simply that these individuals will place greater importance on ethnic attributes as a basis for national identity. Consequently, the distinction between *English* and *British* offers us a unique opportunity to study the relevance of differences in national identity in predicting how people feel and behave when faced with inflows of migrants into their local area.

3. Identity economics

Before delving into the importance of identity economics, a good starting point is social identity theory as this theory provides much of the intellectual impetus for identity economics. Central to social identity theory is the idea that individuals will self-categorize into an *in-group* and *out-group* on the basis of shared social identities (Tajfel and Turner, 1979). The importance of this categorization is that according to the framework developed by Tajfel and Turner (1979) people will place a greater weight on the welfare of other in-group members and look upon members of the out-group unfavourably.

Similarly to more commonly examined categories such as gender, occupation, and sexual orientation, national identity is a type of social identity and the one shown to have significant emotional relevance (Fukuyama, 2018). While in this study we focus on negative consequences, national identity can also be seen as a public good as it can help bind people together and subsequently facilitate trust and cooperation (Putnam, 1993; Fukuyama, 2018). The difficulty arises in that it is far from clear where individuals will draw the boundary between 'us' and 'them' when it comes to identifying who belongs to the nation (in-group). For people with an ethnic form of national identity, their subjective perception of who 'belongs' may extend into the realm of ancestry, culture, and values (Wright *et al.*, 2012).

In a series of influential papers, Akerlof and Kranton (2000, 2002, 2005) introduced a redefinition of the social identity framework into the economic utility function. Doing so they suggested could help explain many phenomena not well explained by current economic models, including that of ethnic and racial conflict, but also many others such as gender discrimination, workplace organization, and occupational choice. The central premise

underpinning their identity economics framework is that people's identities affect utility and subsequently act as primary motivations for behaviour.

To illustrate their framework and how it might apply to this setting, we can start off with a utility function represented here by

$$U_j(a_j, \ a_{-j})$$

where a_j denotes an individual j actions and a_{-j} denotes others actions. Such a utility function recognizes not just the influence of one's own consumption but also strategic interactions with others such as negative externalities associated with other people's consumption. Akerlof and Kranton (2000) proposed incorporating identity, denoted by I into this utility function so that it becomes

$$U_j(a_j, \ a_{-j}, \ I_j)$$

wherein they proposed the following representation of identity utility:

$$I_j(a_j, a_{-j}, \ s_j \ , \ \varepsilon_j, N)$$

Central to this identity utility framework is the assumption that there exists a set of social categories, which we will denote by S, and these represent potential divisions across the population. Each individual j assigns themselves and others into distinct social categories. For our purposes, S can be seen as reflecting national identity, namely 'English' or 'British'. s_j describes j's own national identity category (e.g. English or British) as well as their assignment for everyone else in the population. N denotes the group ideals when it comes to behaviour as well as physical characteristics of someone who is either *English* or *British*.

Identity utility then depends on the match between j's own characteristics, denoted by ε_j and the ideal of j's assigned category. Identity utility also depends on the extent to which own and others actions match with the normative group ideals denoted by N, that are prescribed by each social category. When an individual's own behaviour departs from what is prescribed as appropriate behaviour for their assigned social category, then that can generate anxiety and discomfort in oneself as it threatens their own identity or self-image. More importantly for our purposes, 'identity-related payoffs' from others actions can explain why one's tastes towards immigration may be influenced by the type of social categories people assign themselves too, such as *English* or *British*. For individuals who categorize themselves as *English*, shared ancestry and descent are the ideal physical attributes, and additionally migrants may be less likely to conform to the normative behavioural ideals associated with being *English* given, amongst other things, differences in culture, religion, and language. In turn, contact with migrants may diminish the identity utility I_j of natives who self-identify as *English*. On the other hand, for individuals who categorize themselves as '*British*', the 'actions' of migrants may not give rise to a utility cost as the behaviour of migrants may not be seen as a departure from the normative behavioural ideals of that social category and attributes such as ancestry hold less importance.

4. Methods
4.1 Data
Our study uses data from the UK Household Longitudinal Survey (UKHLS), which collects data from a nationally representative sample on an annual basis. It includes information on subjective well-being as measured by the 12-item General Health Questionnaire (GHQ-12) and self-reported life satisfaction, as well as other individual characteristics such as which

national identity individuals typically ascribe too. The UKHLS contains information from approximately 50,000 individuals in each wave and data for the 'mainstage waves' 1–8 used in this study were collected from 2009 to 2018. Interviews are typically conducted face-to-face in respondents' homes by trained interviewers or by respondents themselves completing their survey online. Every section of the questionnaire, including all the questions, is answered voluntarily. Further information about the UKHLS survey such as study design, sampling, study timeline, questionnaire design, interview process, fieldwork procedures, response rates, data collection, and data processing can be accessed at the following address: https://www.understandingsociety.ac.uk/documentation/mainstage/user-guides/main-survey-user-guide/

4.2 Subjective well-being

Our key outcome variable of subjective well-being is measured using the 12-item version of the General Health Questionnaire (GHQ-12). The GHQ offers an advantage over single-question measures of subjective well-being, such as happiness and life satisfaction as it is based on responses to 12 separate questions.[1] Each of the 12 items (see Table A1 in the Supplementary Appendix for individual statements) is scored on a four-point scale. The overall GHQ score can take values from 0 to 36, with 36 representing the lowest level of subjective well-being. The higher the score, the more likely it is that respondents are suffering from some form of psychological distress. For ease of interpretation, we reversed the overall score so that a value of 36 represents the highest level, and going forward we refer to this variable simply as mental health or mental well-being.

A further metric of subjective well-being in the dataset is self-reported life satisfaction. This measure of subjective well-being is based on respondents' answers to the following question: 'How dissatisfied or satisfied are you with life overall?' Respondents give a single reply from a Likert scale with options ranging from 1 ('completely unsatisfied') to 7 ('completely satisfied'). In the analysis that follows, we examine the relationship between immigration (inflows of migrants into local areas) and both the mental health (GHQ) and life satisfaction of natives (UK-born individuals).

4.3 Immigration

The UK's Office for National Statistics (ONS) collects information about the estimated number of foreign-born individuals (hereafter 'immigrants') living in each local authority area within the UK.[2] These estimates are based on the UK Annual Population Survey which is the largest survey in the UK consisting of approximately 320,000 respondents. Through a special license application, we obtained a geographical identifier that gave us the local authority area of each individual in our UKHLS dataset. Using this geographical identifier, we linked the UKHLS with the UK Annual Population Survey which allowed us to capture not only each individual's subjective well-being but also the estimated number of immigrants living within their local authority area.

Additionally, we merged these datasets with the English Indices of Deprivation provided by the Department for Communities and Local Government. The English Indices of Deprivation measure relative levels of deprivation in 32,844 small areas or neighbourhoods, called Lower-layer Super Output Areas (LSOA), in England. Each individual in our survey dataset (UKHLS) has a spatial identifier (LSOA) which we obtained through a special license application. Using this identifier, we matched each individual in the survey dataset with these English indices of deprivation so that we have a measure of neighbourhood deprivation for each individual in our sample. In our baseline model, we just used the overall index of deprivation. This is an amalgamated measure consisting of seven distinct domains

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[1] Factor analysis shows that most of the variance within these 12-item measures can be explained by one overall general factor. In essence, the GHQ-12 is unidimensional (Gnambs and Staufenbiel, 2018).

[2] There are 391 local authorities in the UK as a whole and 343 in England.

of deprivation which are combined and weighted to calculate one overall Index of Multiple Deprivation. We included this amalgamated neighbourhood deprivation ranking as an additional covariate in order to control for any differences in the economic and social conditions across local authority areas. Given that this control variable is only available for England as opposed to the UK as a whole, we restricted our analysis to England.[3] This Index of Deprivation is published at regular intervals (2004, 2007, 2010, and 2015).[4] In our analysis, we supplemented this measure of deprivation with region dummies.[5]

4.4 National identity

All individuals on their first interview/appearance in the UKHLS are asked: '*What do you consider your national identity to be*? You may choose as many or as few as applies' (Options are: English, Welsh, Scottish, Northern Irish, British, Irish, and Other—Table 1). We can see in the first panel of Table 1 that the two most common national identities relate to English and British, and there is also a significant number who identify as both. Next, we created three sub-groups for further analysis—these consist of individuals who identify as *English only*, *British only*, or a combination of both (see panel 2 in Table 1). For ease of writing, we refer to these groups as *English*, *British*, and English *and* British. In the analysis that follows, we identify to what degree the relationship between inflows of migrants into local areas and the subjective well-being of natives (UK-born individuals) differs across these different groupings. We also examine to what extent these different groupings expressed different voting preferences when it came to the UK referendum on EU membership. We note that there are small numbers of people in the sample who do not belong to either of these three national identity groups as they identify as Scottish, Welsh, or Irish but we exclude these observations given the relatively small numbers involved.

4.5 Empirical specification

Our analysis begins by assuming that the mental health of a UK-born individual (hereafter native) i living in local authority l at time t (W_{ilt}) is explained by changes in the number of immigrants living in each local authority area, hereafter referred to as *immigration* (I_{lt}). To ensure that aggregate time series variation is completely absorbed, we add year dummies y_t to this specification. We also included region dummies and a vector of time-variant individual-level controls (X_{it}) as well as a time-variant measure of neighbourhood deprivation (ND_{lt}). Further summary information on these controls is available in Table A2 in the Supplementary Appendix. Finally, we used robust standard errors clustered at the local authority area level.[6] This yields the following explanatory model where a_i, y_t, and r are the individual, year, and region fixed effects, respectively:

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[3]   Focusing on England still accounts for 76% of all available observations from the UK.

[4]   We extrapolated and interpolated across these intervals to obtain a measure of neighbourhood deprivation for each year and added the resulting deprivation measure as a control variable. Apart from one overall index of deprivation, the DCLG also releases seven separate components of deprivation which it uses to make up the overall combined index. Our results were not sensitive to using these individual metrics (e.g. income, unemployment, health deprivation, etc.) in lieu of the overall combined measure.

[5]   There are 9 regions in England (12 in the UK as a whole) and they define areas (constituencies) for the purposes of elections to the European Parliament. In addition to region-fixed effects, another approach would be to use local authority fixed effects. Doing so here asks a lot of our data when it comes to identifying any impact of immigration as there are 343 local authority areas in England. While we do have a significant number of observations the inclusion of local authority fixed effects would leave little identifying variation left in our immigration variable which among other things would permit any sampling error even if small to play a disproportionately large role (see Abdurrahman and Borjas (2011) for a more detailed discussion on this point). It would also offer little analytical advantage in this case as we already control for region-fixed effects and a time variant measure of neighbourhood deprivation. In such circumstances, it is difficult to think of any potential omitted variable that would not be controlled for by our region-fixed effects or our time-variant measure of neighbourhood deprivation but would be by the addition of local authority fixed effects. Additionally, we also test the sensitivity of our estimates to the use of an instrumental variable approach thus further mitigating any endogeneity concerns.

[6]   Results are not sensitive to other clustering approaches such as clustering at the individual level.

Table 1. Respondents' self-identified 'national identities'

National identity	Sample size	National identity	Sample size
English	100,843	English only	65,120
British	78,379	British only	41,787
Scottish	2,586	English and British	33,079
Welsh	2,218		
Irish	1,180		
No. of Irish	572		
Other	3,349		

Source: authors' calculations.

$$W_{ilt} = \beta_0 + \beta_1 X_{it} + \beta_2\ ND_{lt} + \beta_3 I_{lt} + a_i + y_t + r + \varepsilon_{ilt}$$

To test the importance of national identity, we estimate the equation above separately for natives who identify as *English*, *British*, and English *and* British. In a series of robustness checks discussed later, we also instrument *immigration* (I_{lt}) with a shift-share instrument derived using past-settlement patterns in an approach popularized by Altonji and Card (1991), and substitute mental health (W_{ilt}) with an alternative indicator of subjective well-being, namely self-reported life satisfaction.

5. Results

5.1 Immigration and mental well-being

In Table 2, we present the main individual fixed-effects estimates relating to the relationship between inflows of migrants into local authority areas (*immigration*) and mental health (measured using reversed GHQ-12).[7] In specification 1 in Table 2, we can see that for the population as a whole, *immigration* attracts a negative and statistically significant coefficient ($\beta = -0.031$, $p = 0.02$). In specifications 2, 3, and 4, we present the results from separate fixed effects regressions for our *English*, *British*, and English *and* British identity sub-groups (see Table 1). As evident in this table, the estimated negative population-level mental health impacts associated with immigration are almost, if not entirely, concentrated on the *English* sub-group.

As an illustration, *immigration* attracts a negative and statistically significant coefficient and one that is larger than that observed for the population as a whole when looking specifically at the *English* sub-group ($\beta = -0.047$, $p = 0.04$). On the other hand, *immigration* does not attract a statistically significant coefficient for the *British* sub-group and in terms of size is close to zero ($\beta = -0.010$, $p = 0.6$). Similarly, immigration does not attract a statistically significant coefficient for our English *and* British sub-group, and in terms of size lies between our *English* and *British* sub-groups ($\beta = -0.018$, $p = 0.6$). Overall, the results in Table 2 suggest that the stronger the attachment to an English/ethnic identity, the larger the estimated adverse mental health effects associated with immigration are. Indeed, there is little if any evidence to suggest that *immigration* negatively influences the mental health of individuals who think of themselves as *British* as opposed to *English*.

One may be concerned that our detailed set of controls[8] may partly saturate[9] the impact of immigration and so we also estimated the impact of immigration in a specification just

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[7]   We have an average of five and a maximum of eight observations per person.

[8]   The results relating to the control variables are all along expected lines (see Dolan *et al.*, 2008), and so for brevity are only reported in Table A3 in the Supplementary appendix.

[9]   While adding time-variant controls may help with endogeneity concerns, controlling for certain variables such as unemployment, income, and neighbourhood deprivation may also make it difficult to capture the full impact of immigration by closing down channels in which immigration could impact natives' subjective well-being.

Table 2. The relationship between immigration and mental well-being (GHQ)

	Dependent variable: mental well-being as captured by the General Health questionnaire							
	Full sample	English only	British only	English and British	Full sample	English only	British only	English and British
	Fixed Effects				Fixed effects coupled with a shift-share instrument FE-IV			
	1	2	3	4	5	6	7	8
Immigration	−0.031**	−0.047**	−0.010	−0.018	−0.043***	−0.075***	−0.013	−0.035
	(0.013)	(0.022)	(0.019)	(0.33)	(0.016)	(0.028)	(0.027)	(0.034)
Individual characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Neighborhood deprivation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.006	0.006	0.007	0.007	0.006	0.006	0.007	0.007
Observations	171,277	65,120	41,787	33,079	171,277	65,120	41,787	33,079

Source: authors' calculations.
** Significant at 5% level,
*** Significant at 1% level.
Each specification includes time-variant individual controls (age, age-squared, educational attainment dummies, gross household income, marital status dummies, and labour force status dummies), a time-variant neighbourhood deprivation measure, year and region dummies. The *Fixed Effects* columns include individual fixed-effects and reports robust standard errors (in parenthesis) clustered at the local authority area level. The *FE-IV* columns report the fixed effects estimates after *immigration* has been instrumented using an exogenous predicted value derived from historical settlement patterns (shift-share instrument). The coefficient on our instrument lies between 0.84 and 0.89 in our first stage regression results depending on sample (population as a whole and national identity sub-groups) and our F-statistic lies between 72,632 and 290,000. All instrumental variable estimates are calculated using the xtivreg2 function in Stata. R^2 refers to within-group in FE and centred in FE-IV. Immigration is measured in units of ten thousand.

consisting of our individual, year, and region-fixed effects with all the time-variant controls excluded. These estimates are presented in Table A4 in the Supplementary Appendix and comparing these estimates with those in Table 2, we can see that the addition of our time-variant individual and neighbourhood controls made little difference to the raw estimates obtained from a parsimonious model with just individual, year, and region fixed effects.

5.2 Self-reported life satisfaction

Next, we tested whether the findings described above would be robust to an alternative indicator of subjective well-being available in the UKHLS dataset, namely self-reported life satisfaction. These results can be seen in Table 3. In Specification 1, we can see that *immigration* does not attract a statistically significant coefficient for the population as whole and in terms of size is close to zero. This estimated population level impact, similarly to what we observed when looking at the GHQ (mental health), does, however, appear to mask considerable heterogeneity according to national identity. *Immigration*, for instance, attracts a negative and statistically significant coefficient for the *English* sub-group ($\beta = -0.012$, $p = 0.05$) whereas it attracts a positive and statistically significant coefficient for the *British* sub-group ($\beta = 0.011$, $p = 0.03$). Indeed while there is uncertainty around these point estimates, it is notable that the estimated impact of *immigration* for the life satisfaction of people who identify as *British* is almost the mirror opposite of that observed when looking at those who identify as *English*. In Table A5 in the Supplementary

Table 3. The relationship between immigration and life satisfaction

	Dependent variable: Self-reported Life Satisfaction							
	Full sample	English only	British only	English and British	Full sample	English only	British only	English and British
	Fixed effects				Fixed effects coupled with a shift-share instrument FE-IV			
	1	2	3	4	5	6	7	8
Immigration	0.001	−0.012*	0.011**	0.007	0.002	−0.013	0.016**	0.004
	(0.003)	(0.006)	(0.005)	(0.010)	(0.005)	(0.009)	(0.008)	(0.010)
Individual characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Neighborhood Deprivation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.007	0.008	0.007	0.010	0.007	0.008	0.007	0.010
Observations	169,584	64,600	41,010	32,846	169,584	64,600	41,010	32,846

Source: authors' calculations.
  * Statistically significant at 10% level,
  ** Significant at 5% level,
Each specification includes time-variant individual controls (age, age-squared, educational attainment dummies, gross household income, marital status dummies, and labour force status dummies), a time-variant neighbourhood deprivation measure, year, and region dummies. The *Fixed Effects* columns include individual fixed effects and report robust standard errors (in parenthesis) clustered at the local authority area level. The FE-IV columns report the fixed effects estimates after *immigration* has been instrumented using an exogenous predicted value derived from historical settlement patterns (shift-share instrument). The coefficient on our instrument lies between 0.84 and 0.89 in our first-stage regression results depending on the sample (population as a whole and national identity sub-groups) and our F-statistic lies between 72,408 and 290,000. All instrumental variable estimates are calculated using the xtivreg2 function in Stata. R^2 refers to within group in FE and is centred in FE-IV. Immigration is measured in units of ten thousand.

Appendix, we present the life satisfaction estimates obtained from a parsimonious model consisting of just individual, year, and region fixed effects and we can see here that, similarly to what we observed when looking at mental health, the addition of time-variant controls makes little difference to the overall estimates.

To provide a visual illustration of the differences between the *English* and the *British* identity sub-groups, we next derived a dummy variable that simply compares individuals who identify as *English* to those who identify as *British*. We then interacted this variable with our immigration variable (inflows of migrants into local areas). In Figures 1 and 2, we present a graph that captures the substantive meaning of this interaction effect both for mental health as captured by the GHQ and for life satisfaction. The interaction coefficient for mental health is poorly defined with a large standard error ($\beta = -0.041$, $p = 0.23$) but looking at Figure 1, we can see that those who identify as *English* as opposed to *British* appear to undergo significantly larger estimated reductions in mental health in response to inflows of migrants.

An interesting point raised by one of our reviewers is that the GHQ includes 12 question items and some of these question items may be more strongly related to immigration (e.g. happiness) than others (e.g. difficulties to concentrate and loss of sleep). Rather than examine certain question items such as 'happiness' separately, we have relied on the overall amalgamated GHQ score as it is one of the most widely used measures of mental health in the literature to date, recent research suggests that it is a uni-dimensional construct (see Gnambs and Staufenbiel, 2018), and it avoids us subjectively selecting specific question
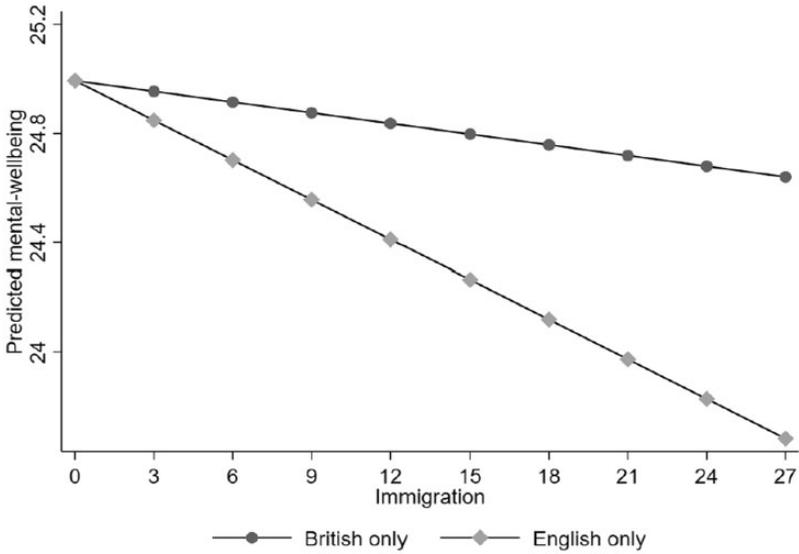
Figure 1. Relationship between immigration and mental well-being (GHQ) for natives who identify as English and British. Immigration is measured in tens of thousands by local authority area.
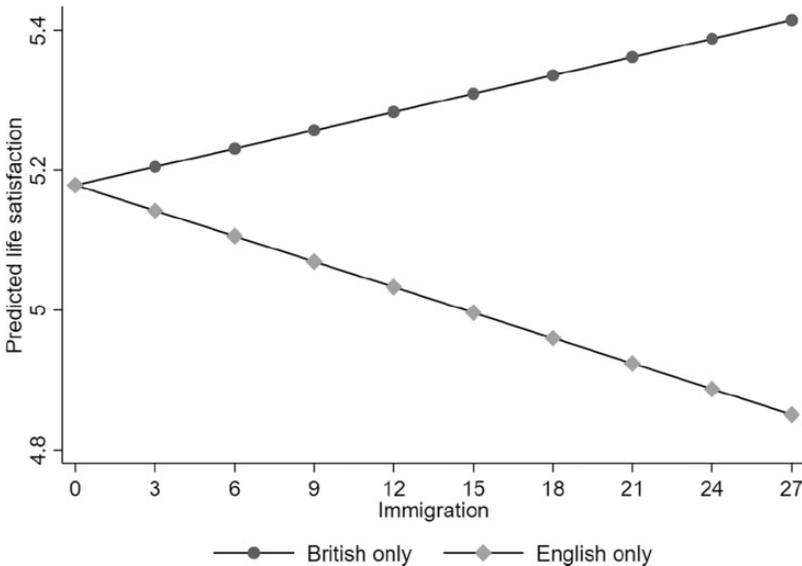

Figure 2. Relationship between immigration and life satisfaction for natives who identify as English and British. Immigration is measured in tens of thousands by local authority area.

items for our analysis. Having said that, we recognize that an analysis of specific question items contained in the GHQ such as 'happiness' could add additional insights in relation to the relationship between immigration and the subjective well-being. In Figure A3 in the Supplementary Appendix, we have thus replicated Figure 1, but this time using 'general happiness' as our outcome measure as suggested by the reviewer. Here respondents are

simply asked: *have you recently been feeling reasonably happy, all things considered?* . Looking at Supplementary Appendix Figure A3, we can again see that those who identify as *English*, as opposed to *British*, undergo significantly larger estimated reductions in 'happiness' in response to inflows of migrants.

Moving on to life satisfaction, the interaction coefficient is much more precisely defined than in the case of the GHQ ($\beta = -0.23$, $p = 0.01$) and we can see in Figure 2 that while there is a negative correlation between inflows of migrants and the life satisfaction of people who identify as *English*, there is a positive correlation between these variables for people who identify as *British*. This would suggest that in direct contrast to their '*English*' counterparts, the life satisfaction of people who identify as *British* may be positively enhanced by immigration.

5.3 The subjective well-being of non-UK born natives

Up to now, our definition of natives has consisted of individuals born in the host country, namely the UK. Fortunately, our dataset allows us to identify a sample (approximately 33,000 observations) of residents who were born *outside* the UK. As an additional way to illustrate the importance of identity-based utility, we replicated the analysis pertaining to main effects in Table 2, but this time focused on the group of residents born outside the UK. We posit that much like UK-born natives with a civic form of national identity, immigration would not diminish the identity-based utility for this group of natives. Our argument rests on the idea that residents born outside the UK are comparatively more likely to share cultural similarities with migrants. This, in turn, will we suggest make it less likely that migrants will be seen as an outgroup or that their behaviours are perceived as a departure from group norms, at least to the same degree that some UK-born natives may see them as such. In support of this premise, we find that the mental health of residents born *outside* the UK appears to be positively enhanced by inflows of migrants ($\beta = 0.078$, $p < 0.01$).[10] Additionally, we also observed a positive relationship between immigration and the life satisfaction of natives born outside the UK, although one that is less well defined ($\beta = 0.009$, $p = 0.12$).

5.4 How large are these effects?

As a means to examine how substantive the differences across identity groups are, we can compare the estimated subjective well-being impact associated with a mean level increase in the inflows of migrants, to that of other commonly observed negative correlates with subjective well-being. It is an approach that is being increasingly used in the economics of happiness literature (White *et al.*, 2013; Howley, 2017). An alternative commonly used approach would be to calculate compensating income variations. The difficulty with this approach is that income is endogenous to well-being (understated—see Powdthavee, 2010 for a discussion of this issue) and thus any compensating income variations may give a misleading (overstated) picture of the importance of immigration.

For ease of presentation, we focus our discussion relating to effect sizes on mental health as captured by the GHQ, as while more conservative than life satisfaction when it comes to estimating differences between our English and British identity sub-groups, it is arguably a more multi-faceted measure of subjective well-being. We can see in Table A3 that being divorced, widowed, or unemployed is associated with a reduction in mental health of 0.19, 0.62, and 1.57 units, respectively (reference categories are single and employed). This is in keeping with much previous research that suggests that unemployment alongside disability is associated with the largest reductions in mental well-being (see, Clark and Oswald, 1994;

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[10]   Our FE-IV estimates relating to the impact of immigration on the mental health of existing residents born outside the UK come to 0.083 ($p < 0.05$). For life satisfaction, our FE-IV estimates are 0.015 ($p < 0.10$) respectively.

Howley and Knight, 2021), whereas the adverse well-being effects associated with divorce and widowhood, while still significant and substantive, are typically more modest.

The mean or average level increase in *immigration* (numbers of migrants) observed across local authority areas during our study period (2009–18) is a 15,273 person increase. Such a change in *immigration* would be associated with an average well-being loss of 0.119 units (1.53×-0.075) for people who identify as *English*.[11] This would be equivalent to 61% of the estimated well-being loss from divorce, 19% of the estimated well-being losses from widowhood, and 7% of the estimated well-being losses from unemployment for the population as a whole. Considering those who identify as *British*, the corresponding figures associated with a mean level increase (15,275) are very small in size, not statistically significant, and would equate to just 10%, 3%, and 1%, respectively.

Next, instead of using the mean level increase observed in local authority areas during our study period as our reference point, we use a standard deviation increase in immigration which amounts to a 42,518 person increase. For people belonging to the *English* sub-group, such an increase in immigration would exceed the estimated well-being loss associated with divorce (168%) and approximately half that associated with widowhood (51%). Clearly then, at least in areas that have witnessed significant inflows, immigration can be associated with substantive negative estimated impacts for subjective well-being, but only for those with an ethnic as opposed to civic form of national identity.

5.5 Further robustness and sensitivity checks
5.5.1 Shift-share instrument
As a robustness check, we tested how sensitive our estimates were to a popular 'shift-share' instrumental variable approach widely used in the immigration literature, particularly when it comes to estimating the labour market impacts of immigration (e.g. see Card, 2001; Crown *et al.*, 2020) but also increasingly for a host of other economic outcomes such as crime (Bell *et al.*, 2013; Gunadi, 2021) and hospital waiting times (Giuntella *et al.*, 2018). With this approach, we rely on historic settlement patterns as the basis for deriving an instrument (predicted value) for current inflows. Before describing this approach, it may be helpful to note that any endogeneity bias that remains after our baseline fixed effects analysis is likely to work against us. Measurement error is, for example, possible when relying on surveys to compute immigrant concentrations, but this will typically place a downward bias on estimates. In our case, the Office for National Statistics estimates immigrant concentrations across local authority areas using a large annual survey of approximately 320,000 respondents, and accordingly we expect any measurement error to be small.

Additionally, if inflows of migrants into local authority areas do negatively impact the subjective well-being of natives living in those areas, then this could encourage those most adversely impacted to move elsewhere. If this occurs to a significant degree, then this may disperse the impact of immigration throughout the UK as a whole, undermining our ability to identify the impact by looking at effects within local areas, and in turn, again leading to downwardly biased estimates. There is no consensus in the literature as to the degree to which (if at all) immigration can lead to native outmigration with conflicting opinions in the USA for example (see Card, 2001; Borjas, 2003). Similar mixed findings are evident in the UK (Hatton and Tani, 2005) but what we can say is that at least in comparison to their European neighbours, mobility in the UK is, in general, low and often constrained by the housing market (Gregg *et al.*, 2004).

In deriving our instrumental variable, we follow the approach of Altonji and Card (1991) by exploiting the settlement patterns evident from a past Census to generate a predicted 'immigration' value that can serve as an instrument for current inflows. The intuition behind this instrumental variable is simply that irrespective of the economic characteristics of

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[11]   Coefficient estimate is taken from Table 2 (IV specification).

neighbourhoods, migrants will be more likely to locate in areas where immigrant settlement is already strong, due to factors such as social networks and language similarity (Bartel, 1989). We use this persistence in location choices as the basis for redistributing the current annual inflows of migrants observed during our study period across local authority areas. We then use these predicted immigration values derived based on past settlement patterns as an instrumental variable for current inflows. For parsimony, we leave a more detailed discussion of this approach for the Supplementary Appendix (see Appendix A6).

A potential problem with using past settlement patterns as an instrument for current inflows would arise if local economic shocks persist over time, as such shocks would be related to settlement patterns and subjective well-being. Our controls such as neighbourhood deprivation partly mitigate against this issue. In addition, in our IV specifications, we are able to implement various sensitivity checks where we can instrument current inflows based on historical settlement patterns derived from using both the 2001 and 1991 census (see Supplementary Appendix A6). Such an approach should lessen any possibility that our instrumental variable is significantly correlated with unobserved persistent local conditions as when using the 1991 census, for instance, there is a minimum 18 but rising to 27-year gap between the data used to generate our predicted immigration value and current inflows.

A further potential problem recently highlighted by Jaeger *et al.* (2018) with the use of shift-share instruments is that such an instrument can violate the exclusion restriction in the presence of general equilibrium adjustments or serial correlation arising from limited change in the country-of-origin composition of immigrant inflows. Jaeger *et al.* (2018) make a compelling argument that in such circumstances the shift-share instrument may capture both the short and long-run responses of immigrant inflows. Serial correlation is unlikely to be a limitation in our setting, however, as in comparison to the USA, the country-of-origin composition and hence the distribution of immigrant inflows has varied more substantially over time as a result of EU enlargement being implemented in a graduated fashion. London, for example, attracted approximately half of all migrants in 1998 but this fell to approximately a third by 2014 (Vargas-Silva and Markaki, 2016). In effect, in contrast to the picture evident in the USA, EU enlargement has altered both the composition as well as number of migrants over time. It also seems unlikely that our outcome variable would trigger dynamic adjustments in the same way as other objective metrics such as wages adjusting to immigration. Notwithstanding these points, we still tested the sensitivity of our estimates to the 'multiple instrumentation' procedure recommended by Jaeger *et al.* (2018) as a solution to this potential problem and we obtain similar results to those obtained when directly using the shift-share instrument (see Supplementary Appendix A6 for more details).

In order to more easily allow a direct comparison with our baseline fixed-effects results, the estimates from our shift-share instrumental variable analysis are presented alongside our baseline fixed-effects results in Table 2 (mental well-being) and Table 3 (life satisfaction). As illustrated in these tables, after we instrument *immigration* with our predicted values (shift-share), our results (FE-IV) remain very similar to that observed in our baseline fixed-effects analysis. In addition to being practically significant (see section above), the difference between our *English* and *British* sub-groups are all statistically significant both for mental well-being and for life satisfaction.[12]

5.5.2 Additional robustness checks

In a further robustness check, rather than examining differences between our ethnic and civic (*English* and *British*) identity groups parametrically as we have done up to now, we used propensity-score matching to construct matched pairs. We present the results as well as a more detailed discussion of this matching exercise in the Supplementary Appendix (see

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[12] Here we employed the standard z statistics: $Z = (b1 - b2)/\sqrt{(SEb1)^2 + (SEb2)^2}$ (Clogg *et al.*, 1995).

Table A11). To sum up, irrespective of which approach we employ, namely fixed effects, fixed effects coupled with a shift-share instrumental variable approach, with and without propensity score matching, we obtain qualitatively similar estimates.

As an additional sensitivity check, we tested how sensitive our results were to alternative means of representing immigration, namely migrant share as opposed to aggregate numbers. Migrant share will take account of differences in the local area population, but will not allow immigration to influence well-being through changes in the local area population and this could be important in a subjective well-being setting. In effect, by using migrant share we could be at risk of closing down an important channel of influence. We discuss our results when using migrant share in more detail in Supplementary Appendix A12. In sum, whether we use aggregate numbers or migrant share matters little for any qualitative result pertaining to differences between our *English* and *British* identity sub-groups.

5.6 Who wanted to leave the EU?

Up to now, using multiple indicators we have looked at the extent to which differences in national identity can predict the relationship between inflows of migrants into local areas and the subjective well-being of natives living in those areas. To provide further support in relation to the importance of patterns of attachment to national identity, as a supplementary analysis we now move on to an examination of whether differences in the form of national identity across natives correlate with voting intentions.

On June 23 2016, the UK voted marginally in favour of withdrawing from the EU leading to what has commonly been termed as 'Brexit'. It is not possible to examine in a literal sense the confidential votes cast. What we can do, however, is based on a self-reported measure contained in wave 8 in the UKHLS dataset, investigate whether national identity can predict citizen's views as to whether the UK should decide to leave the EU in said referendum.[13] Drawing on our earlier findings, we hypothesize that people who think of themselves as *English* will be significantly more likely to be in favour of leaving the EU than people who think of themselves as *British*. This is because while people voted to leave for many reasons, one of the major espoused benefits was that it would allow the UK to 'take back control' over its borders (EU member states allow freedom of movement). We suggest therefore that people's opinion on this issue will be a reasonable proxy for their views on immigration. Drawing on our earlier analysis, if our English identity sub-group is more adversely impacted in subjective well-being terms by immigration, we would expect them to be also comparatively more likely to favour leaving the EU.

In Specification 1 in Table 4, we first simply look at the raw correlation between national identity and the probability of someone believing the UK should leave the EU. We can see here that individuals who identify as *English* have a 20% higher probability of being in favour of leaving than their counterparts who identify as *British*. Individuals who identify as both *English and British* have a 11% higher probability of being in favour of leaving the EU than people who think of themselves as *British*. In Specifications 2 and 3, we add sociodemographic and personality controls (Big Five[14]—see Table A13 in the Supplementary Appendix). Again we see the same pattern evident in Specification 1, albeit the estimated effect sizes drop from 21% and 10% to 14% and 7%, respectively.

Comparing this to education may help provide a further illustrative picture of the importance of differences in national identity in explaining these observed differences in voting intentions. Looking at the marginal effects, education appears to be the socio-demographic characteristic with the most substantive estimated relationship as, for example, those without any formal educational qualifications have a 22% higher probability of being in favour

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13   The specific question wording was: Should the UK remain a member of the European Union or leave the European Union?

14   We have omitted a discussion of the Big Five personality traits here for parsimony. We refer the interested reader to Borghans *et al*. (2008) or John and Srivastava (1999) for a detailed description of this taxonomy.

Table 4. Pooled logit model: average marginal effects relating to opinions on EU referendum

	Dependent variable: Leave/Remain (1/0) EU		
	Specification 1 Pooled logit AME	Specification 2 Pooled logit AME	Specification 3 Pooled logit AME
English and British	0.109***	0.070***	0.067***
	(0.012)	(0.012)	(0.012)
English only	0.203***	0.143***	0.139***
	(0.011)	(0.011)	(0.011)
Age		0.002***	0.002***
		(0.000)	(0.000)
Degree education		−0.234***	−0.218***
		(0.018)	(0.019)
Secondary education		−0.047***	−0.041**
		(0.019)	(0.019)
Other education		0.025	0.029
		(0.022)	(0.023)
Male		0.044***	0.047***
		(0.009)	(0.010)
Household income		−0.013***	−0.014***
(0,000 s)		(0.002)	(0.002)
Self-employed		−0.016	−0.020
		(0.017)	(0.018)
Unemployed		0.015	0.023
		(0.029)	(0.029)
Inactive		−0.007	−0.018
		(0.013)	(0.013)
Openness			−0.023***
			(0.004)
Agreeableness			−0.022***
			(0.005)
Neuroticism			−0.007**
			(0.004)
Extraversion			0.012***
			(0.004)
Conscientiousness			0.028***
			(0.005)
Observations	10,178	10,178	10,178

Source: Authors' calculations.
Standard errors calculated by delta-method are given in parenthesis.
** Significant at 5% level,
*** Significant at 1% level.
The reference category for the national identity dummies (English only, English and British) is British only. The reference category for the education dummies (degree education, secondary education, and other education), gender (male), and labour market status (self-employed, unemployed, inactive) are no formal education, female, and paid employment, respectively.

of leaving the EU than those with a least degree level qualification. The difference between our *English* and *British* sub-groups is broadly comparable however (14%) and furthermore, in contrast to both the *English* and *British* sub-groups, individuals without any formal educational qualifications represent a relatively small share of the overall population (13%). More broadly, we can see that even after controlling for socio-demographic characteristics[15] and personality traits, patterns of attachment to national identity still significantly predict whether individuals feel the UK should withdraw from the EU.

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[15] We point the reader to some interesting recent research that suggests that a further key channel of influence was a person's own subjective feelings relating to the adequacy of their incomes (Liberini *et al.*, 2019).

6. Conclusion

The general public appears to be sharply polarized on the topic of immigration, much more so than on other issues associated with globalization such as free trade and financial integration.[16] Such polarization is evident in the USA where Donald Trump was elected as president with a strong anti-immigration platform, symbolized by his demand to build a wall at the border between the USA and Mexico (Kotzur *et al.*, 2018). Similarly, in the UK, much of the rhetoric underpinning debates surrounding the referendum on EU membership revolved around 'taking back control' over immigration policy and survey research indicates that opposition to freedom of movement was central to explaining why so many people voted to leave (Clarke *et al.*, 2017; Goodwin and Milazzo, 2017). The question we looked to answer in this study is why does immigration generate such strong negative reactions for some people but not for others?

Using multiple indicators of subjective well-being, in addition to an examination of voting preferences, we find consistent support in favour of the importance of differences in how individuals self-identify in terms of their national identity. Specifically, we identified two broadly equally sized population sub-groups who ascribe to different forms of national identity, namely ethnic and civic, and we find group membership to be significant predictors of both how they *feel* in terms of their subjective well-being when faced with inflows of migrants into their local area and *behave* as evident by voting preferences in a referendum where concern with immigration was a salient topic. Apart from being statistically significant, our observed differences were substantive, particularly when it comes to subjective well-being.

Drawing on identity economics, our proposed explanation is simply that for natives with an ethnic form of national identity, migrants are more likely to be viewed as an outgroup. In turn, inflows of migrants into their local area means more contact with people whose actions may not be in keeping with group norms and idealized behaviours and this may negatively impact the self-image or identity utility of this group. This means that for natives where an ethnic form of national identity is dominant, any positive economic benefits associated with immigration may not be enough to outweigh losses in identity-based utility. Contrastingly, for natives with a civic form, the actions of migrants may be perceived as less threatening to their identity or self-image and thus may not give rise to diminished subjective well-being.

It is important to note here that we do not suggest that identity is the only factor that can explain the sharp public divide on immigration issues or that other psychological traits may not prove to be important. Rather we suggest that patterns of attachment to national identity seem to be important. In turn, we hope that this is a useful supplement to much existing research which has focused on more visible markers such as socio-demographic characteristics. Additionally, while we put forward differences in the form of national identity across natives as a key factor that can help us better understand the sharp variation in public opposition to immigration, one must also keep in mind that ethnic diversity itself may influence the development of national identity. One could argue, for instance, that as individuals begin to have regular contact with migrants, then ethnic identity attachments may weaken. Alternatively, they could strengthen in order for individuals to define themselves in increasingly fragmented communities. This latter issue is perhaps more relevant for migrants as opposed to natives given that, as the minority group, they are the ones most likely to feel a need to define themselves.

While immigration and national identity may be shaped by a dual process, for the purposes of this article, it may be important to note that national identity is generally regarded as being largely shaped in adolescence during a 'socialisation period' (Inglehart, 1997; Tilley, 2002, Ford, 2008). In other words, *past* conditions (e.g. levels of ethnic diversity

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[16]   For example, see the Pew Global Attitudes report summarizing cross-national survey data, 'World Publics Welcome Global Trade—But Not Immigration': https://www.pewresearch.org/global/2007/10/04/world-publics-welcome-global-trade-but-not-immigration/ (Accessed on: 27 October 2022).

when growing up) may have been important factors in shaping national identity, but along with many other core social and political values, attachments to national identity are generally regarded as being relatively fixed in adulthood.

To conclude, our findings suggest that differences in the form of national identity across natives can help explain the sharp divide on immigration issues. An important implication of these findings is that even in the face of positive economic benefits, immigration could still have adverse consequences for the utility of some natives. This may make the challenge of integration more difficult, particularly in areas where ethnic forms of national identity are dominant. In such areas, any positive economic benefits associated with immigration may not be enough to outweigh losses in identity-based utility.

Supplementary material

Supplementary material is available on the OUP website. These include replication files and an online appendix.

The data used in this article can be downloaded from the UK Data Service (https://ukdata service.ac.uk/). The user needs to register and submit a special licence application to access data stored under SN6614 and SN6670. The user will be able to download these data after approval from the data owners. Census data are publicly available and can be downloaded from the Nomis website (https://www.nomisweb.co.uk/). Annual immigration data can be downloaded from the ONS website (https://www.ons.gov.uk/). English Indices of Deprivation data can be downloaded from the government's open data website (https://www.data.gov.uk/).

Funding

Acknowledgements

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