

**Too many immigrants: What shapes perceptions and
attitudes towards immigrants in England and Wales?**

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**TOO MANY IMMIGRANTS: WHAT SHAPES PERCEPTION AND ATTITUDES
TOWARDS IMMIGRANTS IN ENGLAND AND WALES?**

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ABSTRACT

This paper investigates the link between natives' residential context, perception of immigration levels and attitudes towards immigrants. We use British Election Study to extract individual level measures for 17,000 respondents in England and Wales and match them with contextual characteristics at the level of Westminster constituency. The paper focuses on three questions: (1) is perception of demographic changes affected by actual growth of the immigrant population? (2) if local context is associated with natives' attitudes towards immigrants, which immigrant groups are most salient? (3) are base levels and changes in immigrant population affecting anti-immigration attitudes in the same way? We find that local context predicts both perception and attitudes, although individual characteristics seem to play a bigger role. Natives seem to be more sensitive to immigrant groups defined by ethnic criteria, rather than skills or religion. Natives are sensitive to changes of immigrant population but base levels of immigrant population are associated with less frequent reporting of high immigration levels. Similarly, natives are more hostile towards immigrants if they reside in areas where the immigrant population grew rapidly, but higher base levels of immigrant population mitigate this response.

INTRODUCTION

In a recent interview for Chanel 4 Fatima Manji, a second-generation British-born Muslim, queried residents of Redcar and Cleveland about immigration. Two white women from one of the whitest areas in the country admitted that their community experienced little immigration recently; nevertheless, they were concerned about the influx of foreigners in near-by Middlesbrough. The conversation seemed friendly until Manji asked about the source of their concern. The women looked at each other and at Manji, finally one said sternly “soon there will be more of *them* than *us*” (Channel 4 News 2013).

In many ways, this conversation exemplifies the debate about immigration in the United Kingdom – we discuss immigration, yet it is not always clear who counts as an immigrant and if natives’ with an actual experience of living in immigrant-dense communities are more concerned than those living in homogeneous, white communities are. This paper aims to investigate how local context is associated with perception and attitudes towards immigrants in England and Wales. We make use of a rich source of information available from British Election Study and link it with local characteristics of 573 Westminster constituencies in England and Wales.

In an introduction to his excellent book on immigration into the United Kingdom, Winder observes that British history is one of astounding traffic into and out of Isles’ ports (2004). Post-WW2 immigration in particular has had a profound impact on British society: fifty years ago, British population consisted of just over 1 per cent of non-white population; by 2011, it increased to 13 per cent.¹ Immigration levels have been high over the last two decades. The Office of National Statistics shows that the net migration rose markedly in the 2000s reaching an all-time high of 330,000 in 2015. To see how these

¹ Estimated total “coloured” population in 1966 Census, reported in Rose (1969).

developments are related to public opinion, note that in 2007 immigration and race relations topped the list of most important issues facing the country, ahead of education, the National Health Service and the economy (Page 2009; Blinder, Ruhs and Vargas-Silva 2011; Blinder 2014). Even though attitudes towards immigration have become less welcoming in recent years, British public remains divided in their assessment of immigration (Ford and Heath 2014).² Apart from two studies based on large units of aggregation (NUTS1), there is little evidence on whether individuals who are most negative in their assessment of immigration reside in areas with first-hand experience of immigration, or, like in case of worried women from Redcar and Cleveland, live in place where there are hardly any immigrants in sight (Markaki 2012; Bridges and Meteut 2014). This study aims to contribute to existing literature by testing how perception and attitudes are related to population composition of non-native population in terms of ethnicity, skills and religion. In doing so, we look at both base levels and changes.

THEORY AND HYPOTHESES

Local context and attitudes towards immigration

To examine variation in attitudes towards immigrants, researchers investigate both individual factors and local context in which natives interact with immigrants. Two dominant theoretical frameworks linking attitudes with local context are the power threat hypothesis and contact theory. Power threat hypothesis conceptualises ethnic hostility between dominant and subordinate groups. With sufficient numbers of newcomers, the hegemonic position of the dominant group is undermined, generating competition over resources such as employment, access to social housing or political influence (Blumer 1958; Blalock 1967). The implications are clear: as observed by Hopkins, the expectation

² For instance, even though the balance of opinion is negative, 31 per cent think that immigration has been good for British economy, and 35 per cent say that immigration enriched Britain's cultural life (Ford and Heath 2014).

that natives in immigrant-heavy communities display negative attitudes towards immigrants is the hallmark of a threatened response (2010). In contrast, contact theory proposes that under certain conditions, local context with higher share of immigrants may facilitate a reduction in prejudice. In his pioneering work, Allport drew attention to the role of interaction for attitude formation (1954). Importantly, presence of minority groups is not a sufficient condition to facilitate a reduction in negative attitudes. Not all forms of contact are equal; in particular, it is important to distinguish between contact resulting in formation of social ties and superficial casual contact (Pettigrew 1998).

What is the evidence in support of these hypotheses? First, it seems that threat operates at a larger scale and contact at smaller scales that are conducive to formation of interpersonal ties. We are more likely to come into meaningful interaction with people living in the same area but have little contact with those living on the other side of the country. Additionally, having first-hand experience of immigrant-dense areas is likely to make people more critical when evaluating inaccurate information about immigrants.

Cross-national studies provide support for power threat hypothesis. In his influential study, Quillian examined Eurobarometer data for 12 Western European countries, and found that the link between presence of non-Western immigrants and anti-immigrant attitudes is stronger if it coincides with economic decline (1995). Further studies have shown that the size of the immigrant population (conceptualised as foreign born, non-EU migrants, non-Western migrants, religious or ethnic minorities) was positively associated with perceived threat, exclusionary preferences and anti-foreigner attitudes (Schneider 2008; Scheepers, Gijsberts and Coenders 2002; Semyonov, Raijman and Gorodzeisky 2006; Semyonov, Raijman and Gorodzeisky 2008), although some studies reported that the actual or

perceived size of immigrant population at the country level is not related to attitudes towards immigrants (Hjerm 2007; Sides and Citrin 2007).³

Studies which look at the subnational context provide less conclusive, a plausible explanation is that at smaller scales, the effect of contact mediates threat reactions, hence much depends on the size of the subnational units. Researchers sought to distinguish between small and larger scales to show that threat and contact operate together but at different scales (Oliver and Wong 2003; Ha 2010; Biggs and Knauss 2012). For instance, Ha looked at both small and large geographic scales (US Census tracts and metropolitan areas) and reported that “attitudes toward immigrants vary across geographic areas [...] anti-immigrant sentiments tend to be greater in the metropolitan areas, and pro-immigrant sentiments are relatively larger in the neighbourhoods”. Studies of subnational contexts have variously reported that concentration of immigrants can have: a negative effect on attitudes towards immigrants (Fossett and Kiecolt 1989; Quillian 1996; Schlueter and Scheepers 2010) no effect (Dustmann and Preston 2001; Evans and Need 2002; Semyonov et al. 2004; Hjerm 2009), have different effects depending on which immigrant groups are considered (Taylor 1998; Dixon and Rosenbaum 2004; Ha 2010), have a positive effect (Fox 2004; Wagner, van Dick, Pettigrew and Christ 2003) or that the effect depends on regional labour market conditions (Markaki and Longhi 2013). The impact of personal ties find consistent support with studies reporting that personal contact with immigrants (having immigrant friends, acquaintances or colleagues) mediates threat responses (Dixon and Rosenbaum 2004; Schneider 2008; Ellison, Shin and Leal 2011).

³ When trying to reconcile these studies with a general pattern emerging from cross-national studies, let us note that Hjerm as well as Sides and Citrin include in their analyses Central and Eastern European countries which exhibit high levels of anti-immigrant attitudes given their relatively low levels of non-Western immigration. This is a questionable selection (and exposes the problem of cross-national analysis) because the authors do not take into account that in Central and Eastern Europe the demise of communism was met with the surge in ethnic nationalism often associated with the struggle for independence under the communist rule. It is worth noting that Luxembourg, a country with over 44 per cent of foreign-born residents, lies on the other side of the attitude spectrum, with natives holding positive attitudes towards immigrants. A recent work by Weber shows that inclusion of Luxembourg affects the overall results of cross-national analysis (2015), with variables for the share of foreign-born going out of significance in models containing Luxembourg.

Perception and Reality

Before looking at how contextual factors influence attitudes, let us explore whether presence of immigrants related with perception of immigration levels. In a study by Semyonov, Rajjman and Gorodzeisky the authors examine how perception of the national share of immigrants was associated with regional share of foreign-born population across 59 districts in Germany (2004). Semyonov and colleagues note that perception of the size of immigrant population was almost twice as high as the actual share of foreign-born residents, confirming that estimates of immigration tend to be upwardly biased. Furthermore, the authors report that even though perceived share is positively associated with perceived threat, the actual share of foreign born residents was not significantly related with perception of threat, suggesting that (at least in Germany) perception of immigration levels is not only biased but also inaccurate. In contrast, Schlueter and Scheepers found that for Dutch municipalities, the size of ethnic minority groups corresponds well with perception (2010). The authors note that perception of a larger ethnic minority group was associated with perception of threatened group interests, which in turn translated into more negative attitudes towards ethnic minorities. There are two possible reasons why results reported by Semyonov et al. and Schlueter and Scheepers diverge. First, the authors adopt different definitions of immigrants (we will develop this point later in their paper). Secondly, the first study looks a larger geographical scale than the latter. In a similar study conducted in the United States, Newman, Velez, Hartman and Bankert (2015) report that objective measures of the size of the foreign-born population together with the unemployment rate strongly predicted perceived levels of local immigration. The results show that those residing in zip code areas with largest share of immigrant population (73 per cent foreign born in parts of Miami, Florida) were nearly 70 per cent more likely to report living among “many immigrants” when compared to those

residing in zip code areas with no foreign born residents.

In line with the finding reported by Semyenov et al. for Germany, we know that perception of immigration levels in the United Kingdom is consistently biased, with national surveys showing a widespread misconception about immigration levels. In 2014, Ipsos MORI reported that the mean estimate of the proportion of foreign-born population was 31 per cent, well over twice the estimate given by the 2011 Census (Duffy and Frere-Smith 2014). The evidence from the US suggests that Americans are innumerate about the size of ethnic minority groups, and their misconceptions are related to everyday social experiences from residential areas: the more encounters with minorities the larger the perception of their share on the national level (Alba, Rumbaut and Marot 2005). In the European context, researchers have used the European Social Survey to show that residents of Western Europe think that the immigrant population is much larger than it is. Additionally, the perceived size of immigrant population translates into negative attitudes towards immigrants, while the actual size does not (Semyonov, Raijman, Gorodzeisky 2008; Strabac 2009). Due to the nature of our data, we are going to look at perception of changes rather than perception of base levels. There are good theoretical reasons to look at changes because in comparison to levels, changes in the proportion of immigrant minority groups are less likely to escape natives' attention. This expectation is coming from behavioural economics, which shows that when evaluation gains and losses individuals tend to react to changes rather than the absolute levels (Kahneman and Tversky 1979).

Hypothesis 1: Perception of immigration levels is positively associated with the actual demographic growth.

Who counts as an immigrant?

The second question relates to identifying who white Britons (i.e. the people whose nativity is rarely questioned) see as immigrants. This issue has been emphasised by

Blinder, who observes that the word immigrant is inherently vague; hence, we cannot be sure of respondents' views on immigration because we do not know which non-native groups they see as immigrants. Even if respondents are provided with a clarification of the concept, we know that they hold different views about different immigrant groups, for instance be welcoming towards highly skilled foreign workers but hostile towards refugees (Card, Dustmann and Preston 2005; Gorodzeisky 2011). Often, immigration status is approximated by ethnicity, even the Western/non-Western distinction employed by Schneider or Hjerm coincides with ethnicity (2008; 2009). Using data from 1983-1996 British Attitudes Study surveys, Ford shows that respondents are more hostile towards immigrants from South East Asia and West Indies (i.e. non-whites), and more positive towards European and Australian immigrants (2011). Ford argues that racial hierarchies represent a key dimension distinguishing "acceptable" and "unacceptable" immigrants. Alternatively, researchers have argued that anti-immigrant attitudes are no longer driven by crude racism but are increasingly rooted in concerns over economic well-being and symbolic unity of the majority group. Since attitudes are affected by conditions in the labour market, natives would be more hostile towards immigrants who are unskilled or unemployed. There is empirical support for this idea, for instance in a study Hainmueller and Hiscox use experimental survey design to show that American opposition to arrival of more immigrants depends on whether immigrants are described as highly skilled or low skilled (2010). The third dimension of acceptability refers to symbolic threats and the idea of ethno-pluralism. McLaren argues that in Western Europe preference for expulsion of immigrants is driven not by self-interest (i.e. unemployed persons showing more negative attitudes towards immigrants who may take their place in the labour market) but by perception of cultural and religious threat (2003). Religious minorities, Muslims in particular, are mentioned as a potential source of symbolic threats (McLaren and Johnson

2007). This is reminiscent of the view that values and beliefs of some religious groups are fundamentally at odds with one another and threatening “our way of life”. Survey research shows that respondents see religion as a potential source of symbolic threat. In the past 47 per cent of the public thought that British Muslims could never be truly committed to Britain, with a further 62 per cent declaring that British Muslims were more loyal to other Muslims around the world than they are to other people in this country (2003).

Hypothesis 2a: Higher base levels of non-white immigrants are associated with more negative attitudes towards immigrants.

Hypothesis 2b: Higher base levels of low skilled immigrants are associated with more negative attitudes towards immigrants.

Hypothesis 2c: Higher base levels of Muslim immigrants are associated with more negative attitudes towards immigrants.

The role of base levels and changes

When examining how presence of immigrants is related to attitudes, researchers tend to apply a static framework to a dynamic process. Consider the inherent vagueness of what it means to be an immigrant; even though immigrants’ arrival may attract media attention and mobilise people to express opposition, immigrants and their children eventually stop being perceived as immigrants. With time come the possibilities for a more meaningful contact. It is plausible that people react adversely to changes, but once they have time to get used to the new environment, they re-evaluate their assessment. Advancements in studying the effect of contextual factors came from studies that moved from levels-based approach and included the impact of overtime changes (Olzak 1987; Olzak 1990; Hopkins 2010) and the interaction between base levels and changes (Green, Strolovitch Dara and Wong 1998; Newman 2013). Importantly, while some studies conceptualise change as merely a replacement of levels, others have shown that considering levels and change

jointly can provide a fuller understanding of the relation between presence of immigrants and attitudes formation.

One such perspective, rooted in a classical interpretation of power-threat hypothesis, holds that members of the majority group would exhibit more hostile views towards minority groups when immigration presents a challenge to the interests of the majority group. This focus on the balance of power is a prominent theme in Olzak's work on ethnic competition, where she argues that conflict is more likely to erupt when ethnic and racial hegemony of the dominant group is challenged and the racial order begins to break down. The rate of ethnic collective action follows because of higher levels of minority groups but also as a reaction to rapid changes in levels of immigration that further increase hostility.

Although some studies imply that there should be more hostility towards immigrants in areas with substantial presence of immigrant population, others suggest that anti-immigration attitudes may be more common when they constitute a smaller share of the population. The latter is in line with the prejudice reduction mechanisms – when there are no opportunities for contact, peoples' ideas about minorities are based on stereotypes, which are often negative. How can levels interact with change in shaping attitudes? An alternative to ethnic competition is found in defended neighborhoods hypothesis which says that hostility towards immigrants will be stronger in homogenous areas experiencing rapid growth of immigrant population. The emphasis on demographic changes suggests that the feeling of threat is not simply a function of the minority population but also depends on prior expectations about the local environment. This hypothesis was tested by Green et al. who found that hate crimes against ethnic minorities in New York were more common in neighbourhoods where non-whites have recently moved into areas described as white strongholds and lower if these minority groups have resided in significant numbers for a long time. Similarly, Newman provides evidence that white Americans' response to

local changes depends on the prior demographic balance in the area (2013). In counties where there were few Hispanics, an influx of Hispanics increased threat response and fostered anti-immigration attitudes. The author argues that a rapid growth of immigrant population is threatening for those living in areas with small pre-existing immigrant populations and less threatening for those residing in areas where immigrants are more established. Newman draws attention to the process of acculturation. Individuals are likely to experience cultural shock at first, yet with time they adapt to the new environment. Natives react adversely to growth in immigrant population; however, the same rate of growth would be associated with less negative reactions in areas where residents had a chance to interact with immigrants over a longer period.

Note that ethnic competition and defended neighborhoods perspectives agree on the effect of growth but disagree on the impact of levels. From ethnic competition perspective, higher levels of minority group population are a source of competition and threat, while defended neighborhoods hypothesis focuses on possibilities for contact. Hence, these theories make similar prediction (i.e. change is associated with higher levels of hostility) but differ with regards to mechanisms; ethnic competition perspective treats growth of immigrant population as a challenge to hegemony of the dominant majority group, while defended neighborhood perspective treats it as a catalyst for action among those who seek to preserve homogeneity.

Hypothesis 3: Higher base levels of immigrant population are associated with more positive attitudes towards immigrants.

Hypothesis 4: Growth of immigrant population is associated with less positive attitudes towards immigrants.

Hypothesis 5: Growth of immigrant population is associated with less positive views about immigrants in areas with low base levels of immigrant population (interaction effect).

DATA AND METHODS

This analysis distinguishes two levels: the individual and the contextual measured at the Westminster constituency level. Individual data comes from British Election Study (BES). The focus of BES is political participation but respondents also answer questions about their views on immigration. Here, we use Wave 4 from the latest study, which was conducted in March 2015 on a sample of over 30,000 respondents in England, Scotland and Wales. BES is an Internet survey and hence we should consider possible implications for drawing inferences about the population. Started in 1967, BES has been a long running study, the closest that British political science came to institutionalising empirical research. The advantage is that YouGov has a relatively large sample at its disposal – over 360,000 British adults who take part in its surveys. For nationally representative samples YouGov draws subsamples so that the panel is representative of British adults in terms of age, gender, social class and types of newspapers read.⁴ The company states that its nationally representative samples are an accurate approximation of British population and “Not just those with internet access, but everyone”.

Because we want to examine perception and attitudes of “non-immigrants”, we focus on a subsample of white British respondents from England and Wales.⁵ What makes BES suitable for our purpose is that we can match residents to their constituencies. Although these units are larger than neighbourhoods, they are they are the natural unit of analysis for competition over political influence. We would prefer to use finer scale; however, this is the smallest level of aggregation available in a survey that asks question about respondents’ views on immigration. Still, it should be emphasised that this level is smaller than regional distinctions often found in the literature. For contextual variables, we use

⁴ Information from <https://yougov.co.uk/about/panel-methodology>

⁵ We excluded Scotland from our analysis because Scottish Census does not release small area statistics on religion by ethnicity.

small area (Output Area) statistics from 2001 and 2011 Census and aggregate them to 2011 Westminster constituencies.⁶ We assume that peoples' expectations about the present are based on experiences from the past, hence for base levels, we use share of immigrants measured in 2001. Regarding changes in immigrant population on one hand, we could think of it as simply the influx of people. This, however, would overlook the fact that constituencies have different number of residents. Hence, we denominate the increase by the number of people in the constituency in 2001, creating what amounts to a measure of growth for immigrant populations.

There are two dependent variables. Our first dependent variable is the perception of levels of immigration where we rely on the following question from BES: "Do you think that levels of immigration are getting higher, getting lower or staying about the same?". There are five ordered responded options, ranging from "Getting much higher" to "Getting much lower". The distribution of this variable is shown in Figure 1. The second dependent variable measures attitudes. To construct this variable, we use the following three questions: (1) "Do you think immigration is good or bad for Britain's economy?", (2) "Do you think that immigration undermines or enriches Britain's cultural life?" and (3) "Immigrants are a burden on the welfare state". The first two variables are measured on a scale from 1 to 7, for economic impact it ranges from "Bad for economy" to "Good for economy" and from "Undermines cultural life" to "Enriches cultural life" for cultural impact. The third variable is measured on a scale from 0 "Strongly agree" to 5 "Strongly disagree". The variables are highly correlated (Cronbach's $\alpha=.89$), we follow a common practice of using principal factor analysis to construct an index of attitudes (Semyonov et al. 2006; Sides and Citrin 2007; Hjerm 2007). Distribution of the index is

⁶ In case of 2011 Census this was a relatively simple exercise in aggregation, however for calculating change overtime we use GIS to deal with the modifiable areal unit problem (boundaries of some constituencies changed between 2001 and 2011 so they were not directly comparable).

shown in Figure 2; higher values of the index correspond to more positive attitudes towards immigrants. The peak at the minimum value is for people who have most negative assessment of immigrants on all three measures (13 per cent of those who replied to all three questions on attitudes to immigrants). The main explanatory variables, base levels and change are constructed using Census statistics aggregated at constituency level. To distinguish between different immigrant groups, we look at all those who are not classified as white British (see Figure 3).

*** Figure 1 Perception of immigration levels ***

*** Figure 2 Index of attitudes towards immigrants ***

To address the problem of who counts as an immigrant we start by noting who is not defined as an immigrant: The nativity of white Britons is rarely questioned. We will treat them as “non-immigrants”. Next, the remaining population (all residents minus white Britons) is divided according to different criteria - ethnic (white and non-white), skills (unskilled and skilled) and religion (Muslim and non-Muslim).⁷ Apart from base levels and changes, we also include measures of residential segregation between each immigrant group and white British majority group. To calculate segregation, we use index of dissimilarity calculated over 8,546 wards and electoral divisions and 573 English and Welsh constituencies.

*** Figure 3 Construction of immigrant groups ***

Other independent variables are sex, age, lack of educational qualifications, subjective perceptions of risk of unemployment, economic situation and risk of poverty. While sex, age or lack of qualifications are classic control variables (because temporally these are placed before the association we investigate - presence of immigrants in the area cannot

⁷ We follow (Rose et al. 2005) and code NS-SeC class five which includes semi-routine and routine occupations as unskilled, while skilled occupations are those in class one to four, from managerial and professional to lower supervisory and technical occupations.

influence respondents' sex) the remaining variables may not be antecedent to variables we investigate. In particular, this may apply to subjective views about one's employment prospects, here it is plausible that presence of immigrants may influence individual evaluation of chances for employment which in turn affects attitudes towards immigrants (here subjective perception of employment is an intermediate variable which *mediates* the impact of context on attitudes). On the other hand, not including individual level variables would weaken our analysis because while it is known that sex, age and educational qualification are strong predictors of anti-immigration sentiments, so are variables capturing socio-economic deprivation. Because we focus on native's attitudes to immigration, we analyse responses given by white British respondents. Contextual variables for population density at constituency level and the percentage of unemployed are also included as well as a regional dummy variable for Wales. Descriptive statistics for dependent and independent variables are shown in Table 1.

We model perception with ordered logistic regression with clustered errors. For attitudes, we use multi-level mixed effects model, a method preferred when dealing with nested sources of variability. Regressions are weighted using BES sampling weights for Wave 4 (Stata [pw] command).

*** Table 1 Descriptive statistics ***

RESULTS

Results from ordered logistic regression are displayed in Table 2. Is respondents' perception associated with actual change in their constituency? The results suggest that the answer to this question largely depends on respondents' individual characteristics, rather than the characteristics of the area in which they live. Adding contextual factors brings only limited improvement to Model 1 (Base Model). In the same time, we observe a pattern where base levels are associated with respondents reporting lower increases in

immigration, while changes are associated with reporting of higher increases in immigration for non-whites (note that the scale goes from 1 which stands for “Getting much lower” to 5 which stands for “Getting a lot Higher”). Respondents seem to react to changes in population of non-whites. Respondents are also less likely to report that immigration levels are “Getting much higher” if there is a large pre-existing immigrant population in their area (See Figure 4). Together with the results in Model 4, this suggests that in terms of contextual effects, respondents do not react as strongly to skills and religion but rather ethnicity. Model 3 and 4 show that base levels of unskilled and non-Muslim immigrants in 2001 are associated with reporting of lower levels of immigration which is in line with the argument that past levels form expectations about the future.

*** Table 2 Perception of immigration levels ***

To assess whether local context is important for attitudes let us look at the proportion of variance in attitudes explained by cross-constituency differences as compared to individual differences. We run the null model with a constant and random variation between- and within constituencies. This gives the Interclass Correlation (ICC), calculated by dividing the variance at the constituency level by the total variance. The ICC shows that only about 6 per cent of total variance in attitudes is attributable to difference across constituencies with remaining 94 per cent attributed to individual differences. To test Hypothesis 2 about the influence of immigration defined through ethnic, skills-based and religious categories, we run three separate regressions and select the model leading to the greatest reduction of the AIC score. The results are shown in Table 3. Model 5 include individual factors; Models 6 to 8 show results with contextual variables for each immigrant group. With a reduction in AIC score, models that include contextual factors are superior in comparison to Model 5. Model 6 is associated with the greatest reduction (38), suggesting that

ethnicity performs better at explaining variance in attitudes towards immigrants than skill-based or religious categories. This provides support for Hypothesis 2a.

*** Table 3 Attitudes towards immigrants ***

*** Table 4 Attitudes towards immigrants ***

Next, we find support for Hypothesis 3; higher base levels of immigrant population are associated with more positive attitudes towards immigrants. For non-whites, unskilled and non-Muslim immigrant populations this association is statistically significant at .05 level. Hypothesis 4 about change is supported with the effect in predicted direction observed for change in the share of non-whites and Muslim immigrant populations. To test Hypothesis 5, we use the model with the lowest AIC score and add interaction effect between the base level and change for white and non-white immigrants (Table 5). In Model 9 the interaction effect is statistically significant for non-whites; Figure 5 shows how both variables affect the estimated attitude index. Attitudes towards immigrants are most positive in constituencies with larger base levels of non-white population and little changes in non-white population. Living in constituencies with low base levels of non-white population is associated with more negative evaluation of immigrants, however in this case changes do not seem to matter as much. Those living in constituencies with high base levels of non-white population seem to react to changes more (note that the slope for high base level is steeper). Model 9 also shows that higher levels of residential segregation are associated with more negative attitudes towards non-whites, we also find a statistically significant effect in the opposite direction (i.e. higher segregation is associated with more positive attitudes) for white immigrant group. This could be due to differences in visibility – threat response would be easier to elicit in case of non-white group as they are easier to spot on the street, while people may be more oblivious of living in an area with higher share of white immigrants, especially if they live in more segregated areas.

*** Figure 4 Effect of changes on the probability of saying that immigration levels have
'increased a lot' by base levels ***

*** Figure 5 Effect of changes on attitudes towards immigrants by base levels ***

DISCUSSION

Before discussing the implications of the results, let us reiterate the limitations of this study. Our dependent variables rely on respondents' evaluation of factual statements. High levels of immigration are a fact, not a matter of individual opinion. We focus the variation in local levels of immigration and test whether it is associated with local variation in anti-immigrant sentiments. Alternatively, one could ask respondents for their views about immigrants (for instance "Would you object to living next to immigrants") but the potential problem with such question is desirability bias. We argue that the problem is to some degree alleviated because we create an index from three factual statements (referring to immigrants' impact on the economy, culture and the welfare state), one should be careful about equating scepticism with xenophobia. Secondly, a note of caution is due in respect to making statements about the causal link between positive attitudes towards immigrants and immigrant-dense context. Dustmann and Preston have previously argued that ethnic composition should not be treated as an exogenous variable in attitudinal studies, especially if units of analysis are small (this is because most residential moves take place over relatively short distances). Finding that a higher share of immigrants is associated with more positive attitudes towards immigrants does not warrant a conclusion that presence of immigrants positively influenced natives' attitudes; an alternative interpretation would be that those with most negative attitudes simply moved out (2001). We do not have a direct way to ensure that this mechanism did not influence our results, however we can call on a recent study by Kaufmann and Harris who have shown that while it is true that white movers generally select whiter destinations than

ethnic minorities, there is little difference in diversity of the destinations of those who tend to be pro-immigration (i.e. left leaning with a degree) and those who are usually against it (declaring English identity) (2015).

Let us reiterate what we have learned. First, respondents' perception of immigration levels seems to be subject to similar dynamics as attitudes, i.e. people report lower levels of immigration if they live in areas with larger pre-existing immigrant communities and higher levels when the actual demographic growth of immigrant population is high. Secondly, on the question of which categories are most salient we found that ethnicity is more important than skills and religion. Furthermore, we found that changes and base levels of immigrant population are both associated with attitudes. We confirmed that pre-existing levels are associated with less negative attitudes, while growth in immigrant population fosters negative attitudes. The interaction effect found in this study differs from predictions given by ethnic competition theory of defended neighbourhoods' hypothesis. We find that changes are associated with more hostility and this effect is more pronounced in constituencies with higher pre-existing levels of non-white population. A plausible explanation is that while areas with higher pre-existing levels of immigrant population offer more opportunities for contact, the speed of change undermines the ability to accommodate further change. In other words, prejudice-reducing mechanisms of interpersonal contact cannot catch up with threat responses triggered by the rapid growth in the immigrant population.

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TABLE 1 DESCRIPTIVE STATISTICS

	Obs.	Mean	Std.Dev.	Min	Max
Dependent variables					
Perceived levels	16,939	4.17	0.89	1.00	5.00
Attitude index	17,373	-0.16	0.94	-1.50	1.84
Independent variables					
Individual					
Male	17,373	0.52	0.50	0.00	1.00
Age	17,373	50.54	16.18	16.00	95.00
No qualification	17,373	0.08	0.27	0.00	1.00
Risk of unemployment	17,373	0.14	0.35	0.00	1.00
Economic situation got worse	17,373	0.32	0.47	0.00	1.00
Risk of poverty	17,373	0.23	0.42	0.00	1.00
Constituency					
No qualifications	17,373	0.23	0.05	0.10	0.39
Density	17,373	7.83	4.09	1.08	39.50
Wales	17,373	0.07	0.26	0.00	1.00
Level: white immigrants	17,373	0.04	0.03	0.01	0.30
Level: non-white immigrants	17,373	0.07	0.10	0.00	0.66
Change: white immigrants	17,373	0.02	0.02	0.00	0.12
Change: non-white immigrants	17,373	0.06	0.06	0.00	0.38
Segregation: white immigrants	17,373	0.15	0.07	0.02	0.47
Segregation: non-white immigrants	17,373	0.23	0.11	0.05	0.66
Level: unskilled immigrants	17,373	0.02	0.02	0.00	0.16
Level: skills immigrants	17,373	0.04	0.05	0.01	0.33
Change: unskilled immigrants	17,373	0.02	0.02	0.00	0.11
Change: skilled immigrants	17,373	0.03	0.04	-0.01	0.23
Segregation: unskilled immigrants	17,373	0.25	0.10	0.04	0.63
Segregation: skilled immigrants	17,373	0.18	0.08	0.03	0.52
Level: Muslim immigrants	17,373	0.02	0.04	0.00	0.39
Level: non-Muslim immigrants	17,373	0.08	0.09	0.01	0.61
Change: Muslim immigrants	17,373	0.02	0.03	-0.01	0.30
Change: non-Muslim immigrants	17,373	0.06	0.06	-0.01	0.30
Segregation: Muslim immigrants	17,373	0.34	0.13	0.08	0.77
Segregation: non-Muslim immigrants	17,373	0.19	0.08	0.04	0.54

TABLE 2 PERCEPTION OF IMMIGRATION LEVELS

	Model 1	Model 2	Model 3	Model 4
Individual				
Male	-0,012 (-0.34)	-0,013 (-0.36)	-0,012 (-0.33)	-0,012 (-0.33)
Age	0,030 *** (23.67)	0,031 *** (23.75)	0,030 *** (23.63)	0,030 *** (23.61)
No qualification	0,734 *** (9.94)	0,737 *** (9.98)	0,737 *** (9.97)	0,735 *** (9.93)
Risk of unemployment	-0,110 (-1.90)	-0,108 (-1.87)	-0,109 (-1.88)	-0,108 (-1.87)
Economic situation got worse	0,249 *** (5.69)	0,248 *** (5.65)	0,248 *** (5.65)	0,248 *** (5.66)
Risk of poverty	0,339 *** (6.4)	0,341 *** (6.42)	0,342 *** (6.43)	0,339 *** (6.4)
Constituency				
No qualification	2,215 *** (6.04)	1,976 *** (3.82)	2,584 *** (5.4)	1,970 *** (4.49)
Density	-0,006 (-1.25)	-0,007 (-1.31)	-0,006 (-1.06)	-0,007 (-1.18)
Wales	-0,112 (-1.62)	-0,113 (-1.60)	-0,120 (-1.73)	-0,102 (-1.48)
Level: white immigrants		-0,625 (-0.73)		
Level: non-white immigrants		-0,872 * (-2.28)		
Change: white immigrants		-0,539 (-0.36)		
Change: non-white immigrants		1,412 * (2.16)		
Segregation: white immigrants		-0,484 (-1.39)		
Segregation: non-white immigrants		0,387 (1.64)		
Level: unskilled immigrants			-5,182 * (-2.14)	
Level: skilled immigrants			0,697 (0.63)	
Change: unskilled immigrants			-2,581 (-1.08)	
Change: skilled immigrants			2,590 (1.46)	
Segregation: unskilled immigrants			0,242 (0.76)	

Segregation: skilled immigrants	0,328 (0.88)
Level: Muslim immigrants	0,414 (0.48)
Level: non-Muslim immigrants	-0,938 * (-2.44)
Change: Muslim immigrants	-0,348 (-0.26)
Change: non-Muslim immigrants	1,094 (1.55)
Segregation: Muslim immigrants	-0,097 (-0.44)
Segregation: non-Muslim immigrants	0,141 (0.42)

Cut1	-2,948 *** (-18.83)	-3,011 *** (-14.77)	-2,755 *** (-14.69)	-3,021 *** (-16.61)
Cut2	-1,413 *** (-11.81)	-1,475 *** (-8.44)	-1,219 *** (-7.85)	-1,485 *** (-9.76)
Cut3	0,926 *** (8.54)	0,865 *** (5.13)	1,121 *** (7.55)	0,854 *** (5.82)
Cut4	2,431 *** (21.83)	2,371 *** (13.91)	2,628 *** (17.41)	2,36 *** (15.88)
N	16,939	16,939	16,939	16,939
R ²	0,044	0,044	0,044	0,044
AIC	38,131	38,121	37,125	38,132

Standard errors in parentheses. * p < 0.05, ** p < 0.01, *** p < 0.001

TABLE 3 ATTITUDES TOWARDS IMMIGRANTS

	Model 5	Model 6	Model 7	Model 8
Individual				
Male	0,113 *** (6.84)	0,113 *** (6.9)	0,113 *** (6.87)	0,113 *** (6.88)
Age	-0,009 *** (-14.45)	-0,009 *** (-14.53)	-0,009 *** (-14.44)	-0,009 *** (-14.44)
No qualification	-0,361 *** (-12.46)	-0,364 *** (-12.58)	-0,363 *** (-12.56)	-0,363 *** (-12.53)
Risk of unemployment	0,088 ** (3.19)	0,087 ** (3.18)	0,087 ** (3.19)	0,088 ** (3.19)
Economic situation got worse	-0,043 * (-2.12)	-0,043 * (-2.12)	-0,043 * (-2.11)	-0,043 * (-2.10)
Risk of poverty	-0,183 *** (-8.21)	-0,185 *** (-8.25)	-0,185 *** (-8.26)	-0,184 *** (-8.25)
Constituency				
No qualification	-1,954 *** (-10.46)	-1,663 *** (-6.42)	-1,766 *** (-7.03)	-1,411 *** (-6.56)
Density	-0,005 (-1.83)	0,000 (-0.05)	-0,001 (-0.37)	0,002 (0.5)
Wales	0,063 (1.56)	0,061 (1.52)	0,060 (1.47)	0,056 (1.41)
Level: white immigrants		0,245 (0.45)		
Level: non-white immigrants		0,817 *** (4.3)		
Change: white immigrants		1,080 (1.33)		
Change: non-white immigrants		-0,958 ** (-3.21)		
Segregation: white immigrants		0,378 * (2.13)		
Segregation: non-white immigrants		-0,431 *** (-3.71)		
Level: unskilled immigrants			2,923 * (2.15)	
Level: skilled immigrants			-0,145 (-0.21)	
Change: unskilled immigrants			0,276 (0.21)	
Change: skilled immigrants			-0,441 (-0.43)	
Segregation: unskilled immigrants			-0,011 (-0.07)	
Segregation: skilled immigrants			-0,424 * (-2.23)	
Level: Muslim immigrants				0,737 (1.73)
Level: non-Muslim immigrants				0,687 (3.58)
Change: Muslim immigrants				-1,677 (-2.48)
Change: non-Muslim immigrants				0,051 (0.14)

Segregation: Muslim immigrants				-0,081 (-0.77)
Segregation: non-Muslim immigrants				-0,011 (-0.07)
Constant	0,779 *** (13.41)	0,686 *** (7.56)	0,754 *** (9.05)	0,588 (7.62)
<hr/>				
Random effects				
Between	0,030	0,026	0,028	0,027
Within	0,783	0,783	0,783	0,783
<hr/>				
N	17,373	17,373	17,373	17,373
AIC	45,448	45,410	45,434	45,428
<hr/>				

Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

TABLE 4 ATTITUDES TOWARDS IMMIGRANTS (CONT.)

		Model 9
Individual		
Male		0,113 *** (-6.9)
Age		-0,009 *** (-14.45)
No qualification		-0,364 *** (-12.62)
Risk of unemployment		0,087 ** (3.18)
Economic situation got worse		-0,043 * (-2.11)
Risk of poverty		-0,184 *** (-8.22)
Constituency		
No qualification		-1,817 *** (-6.68)
Density		0,002 (0.59)
Wales		0,054 (1.34)
Level: white immigrants		-1,012 (-1.22)
Level: non-white immigrants		1,300 *** -4,510
Change: white immigrants		-0,312 (-0.29)
Change: non-white immigrants		-0,499 (-1.36)
Segregation: white immigrants		0,484 ** -2,630
Segregation: non-white immigrants		-0,531 *** (-4.29)
Interaction: white immigrants		19,890 (1.59)
Interaction: non-white immigrants		-2,735 * (-2.23)
Constant		0,732 *** (7.54)
Random effects		
Between		0,025
Within		0,783

N	17 373
AIC	45 408

Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

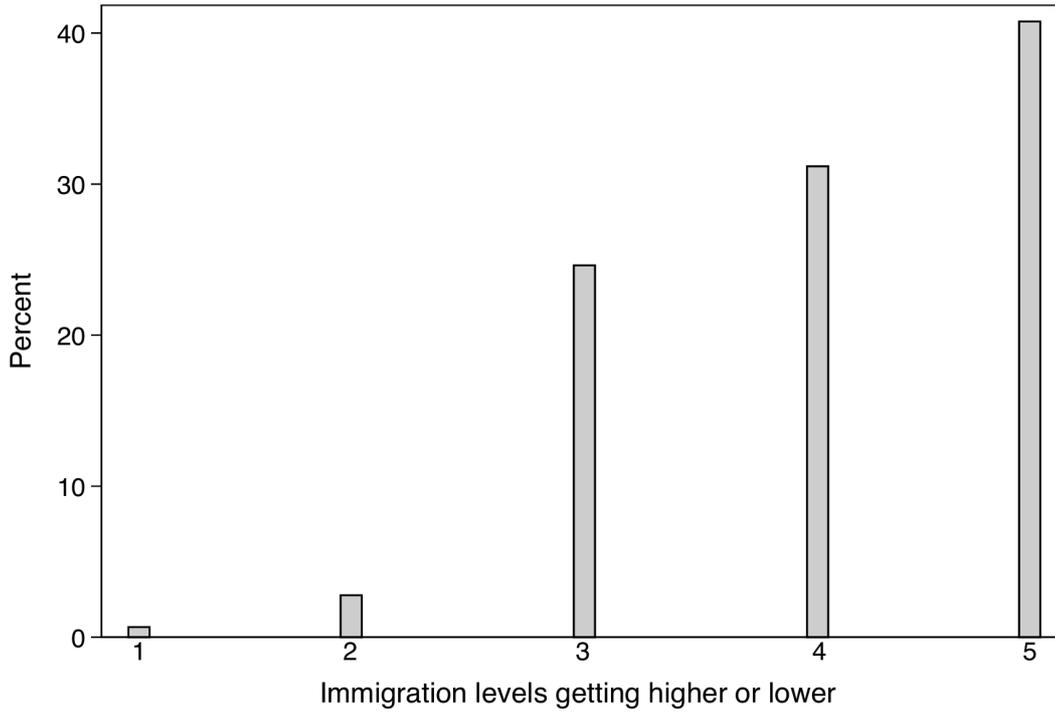


FIGURE 1 PERCEPTION OF IMMIGRATION LEVELS

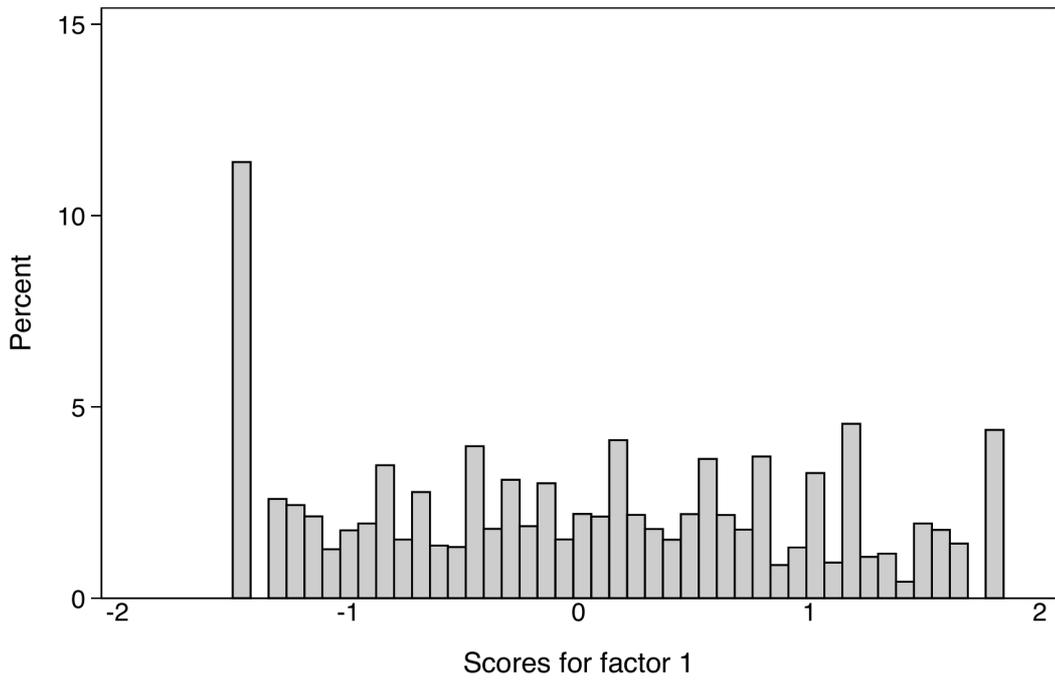


FIGURE 2 INDEX OF ATTITUDES TOWARDS IMMIGRANTS

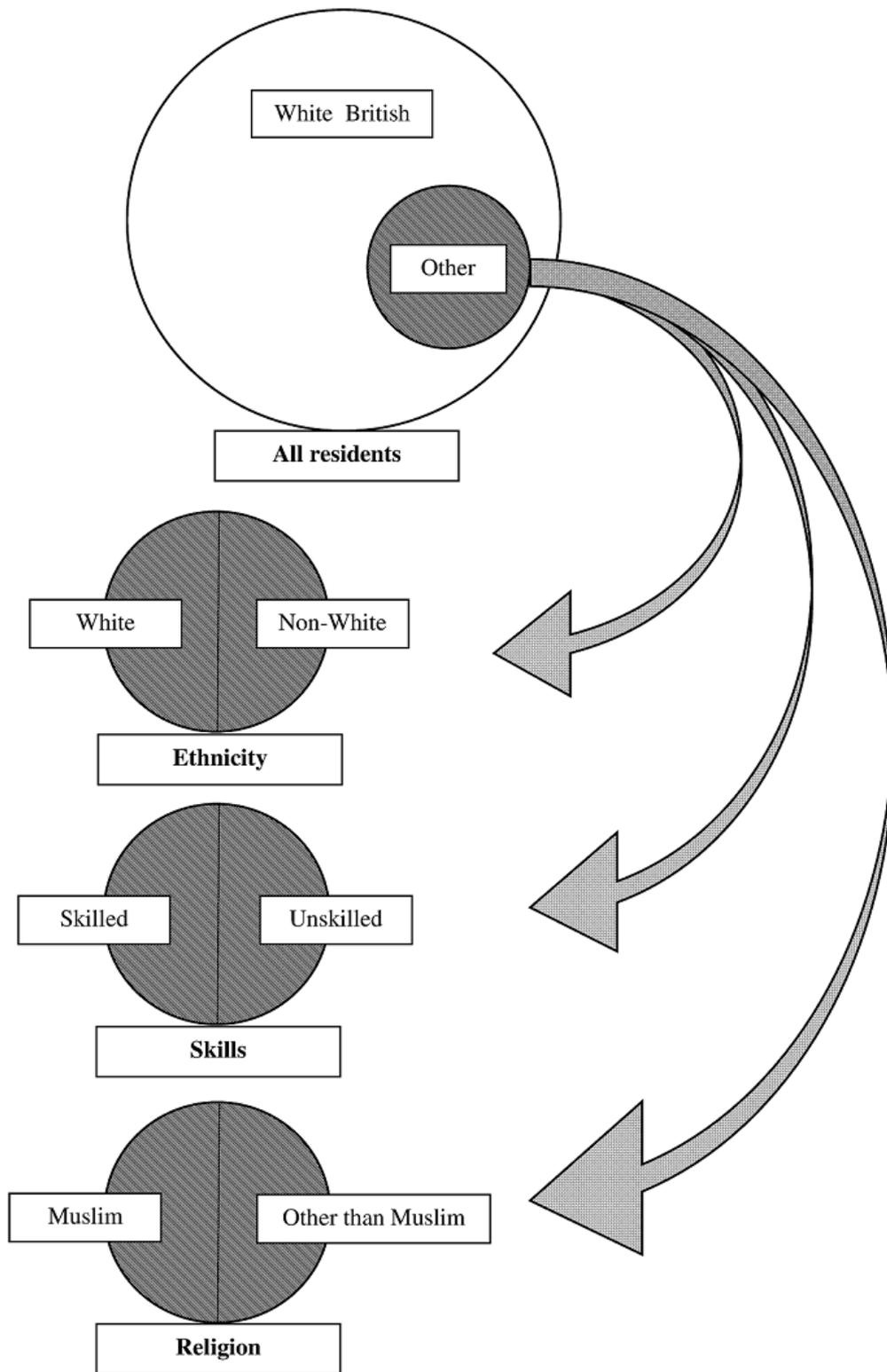


FIGURE 3 CONSTRUCTION OF IMMIGRANT GROUPS

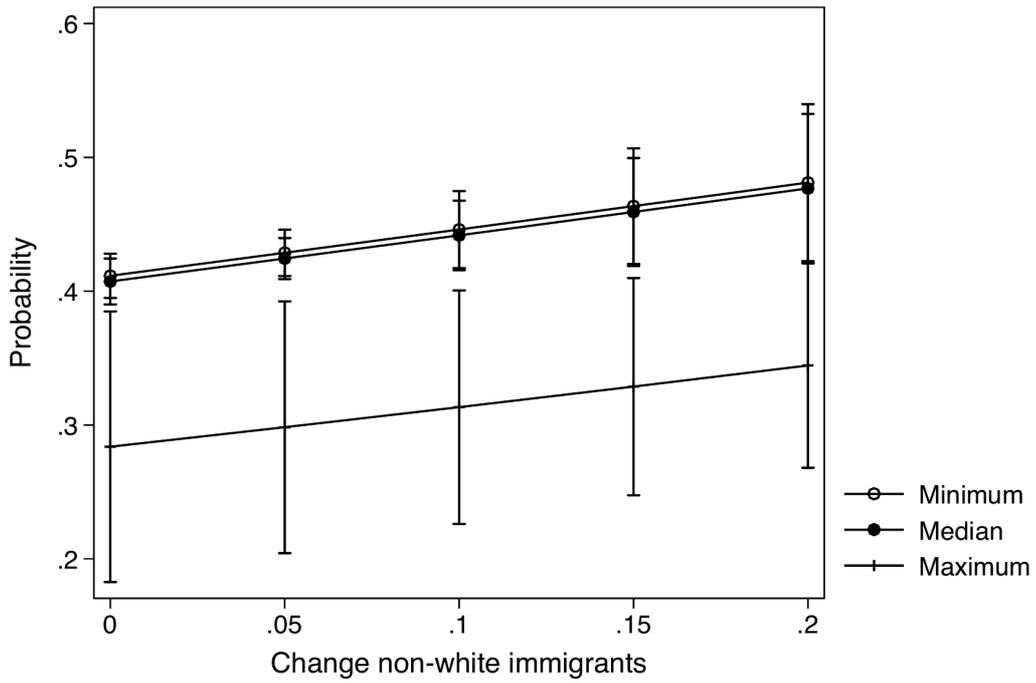


FIGURE 4 EFFECT OF CHANGES ON PROBABILITY OF SAYING THAT IMMIGRATION LEVELS HAVE 'INCREASED A LOT' AT DIFFERENT BASE LEVELS.

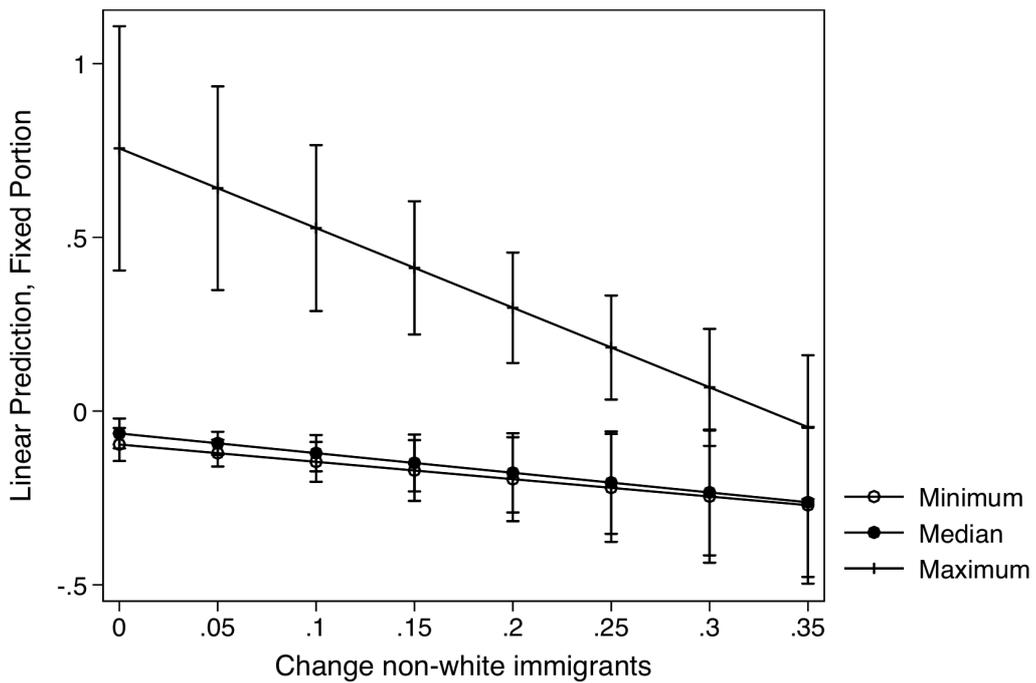


FIGURE 5 EFFECT OF CHANGES ON ATTITUDES TOWARDS IMMIGRANTS AT DIFFERENT BASE LEVELS.