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## Sources of anti-immigration attitudes in the United Kingdom: The impact of population, labour market and skills context

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# Sources of anti-immigration attitudes in the United Kingdom: the impact of population, labour market and skills context

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## **Non-technical summary**

The UK coalition government's promise in 2011 to reduce net immigration from its then current 250,000 to 'tens of thousands' by the next general election, came as a response to popular concerns over the impact of immigration in the United Kingdom. Existing research on what drives negative reactions to immigration has focused mainly on the characteristics of individuals, such as employment status and education, and the composition of the local population with regards to ethnicity. Although important, these factors do not address all issues involved in the current immigration debate in the United Kingdom. The increasing pressure on public policy to restrict immigration has often been associated with perceptions of the effects of introducing growing numbers of foreign people into the labour market, welfare system and local culture. It is therefore useful to empirically test to what extent opinions among natives are associated, not only with the composition of the population in terms of origin and ethnicity, but also in relation to the conditions in the labour market and the skills of natives relative to the immigrant population.

This paper explores individual and regional characteristics as sources of anti-immigration attitudes of white UK born respondents resident in the United Kingdom using cross-sectional survey data from the five rounds of the European Social Survey between 2002 and 2010. The regional indicators of population composition, labour market and skills context are calculated using the individual level dataset of the Labour Force Survey.

Empirical results indicate that, contrary to expectations, the regional unemployment rates for natives and immigrants are not statistically associated with a higher or lower probability of expressing concerns over the impact of immigration or of preferring that no immigrants be allowed to come to the UK. However, the percentage of immigrant population in the respondent's occupational category within the region of residence is associated with a higher probability of preferring restriction of immigrants of the same ethnic/race group as the majority of the population. Furthermore, findings suggest that native respondents are more likely to support immigration restriction of those from poorer countries regardless of whether they are European or not and irrespective of ethnicity.

# **Sources of anti-immigration attitudes in the United Kingdom**

## *The impact of population, labour market and skills context*

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### **Abstract**

This paper explores individual and regional characteristics as sources of anti-immigration attitudes of white UK born respondents using survey data from the five rounds of the European Social Survey, between 2002 and 2010, alongside regional indicators of population composition, labour market and skills context computed from the Labour Force Survey. Contrary to expectations, the regional unemployment rates for natives and immigrants are not statistically associated with a higher or lower probability of expressing anti-immigration attitudes. Furthermore, findings suggest that native respondents are more likely to support immigration restriction of those from poorer countries regardless of whether they are European or not and irrespective of ethnicity.

**Keywords:** immigration attitudes, United Kingdom, population, labour market, skills

**JEL Classification:** J15, R23

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# 1 Introduction

A member of the public comments on the *Guardian* website about the government's then newly proposed set of measures to tackle immigration:

*"Many skilled people and young people will be glad to see this imposed. There is a difference between competing against the people you went to university with and millions of people willing to work for less from Asian countries."*<sup>1</sup>

This comment highlights three essential elements of the immigration debate in the United Kingdom: origin of the immigrant population, level of skill and job competition. Existing literature on the contextual sources of anti-immigration attitudes in the United Kingdom has emphasised the impact of the ethnic composition at a local level but has not yet taken full account of how the labour market conditions and immigrant-native skill composition influence natives' evaluations and preferences over immigration policy.

The UK sample from the five rounds of the European Social Survey between 2002 and 2010 with the addition of aggregate level indicators computed from the Labour Force Survey enable me to empirically test whether the composition of the regional population in terms of origin and ethnicity, along with the conditions of the labour market and the skill distribution of the natives relative to the immigrant population, has a significant effect on attitudes towards immigration. In consideration of the complexity and variability of attitudes towards immigrants, this examination tests relevant hypotheses on six measures of attitudes. Three of them capture feelings about the level of threat from immigration in relation to the economy, culture and life overall, while the other three reflect views on immigration restriction from particular race/ethnic groups.

Focusing solely on the United Kingdom facilitates a more comprehensive and detailed examination of attitudes towards immigrants and allows me to address a wide variety of hypotheses that would be otherwise difficult to cover in a large scale cross-national study. The five rounds of the European Social Survey, although not longitudinal, provide a large enough sample size for robust statistical testing and give information on native respondents' attitudes towards immigration be-

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<sup>1</sup>Quotation is drawn from a public comment in response to the article '*Skilled migrants to lose right to settle in UK*'. This article appeared on p.4 of the main section of the *Guardian* on Wednesday 29 February 2012. The comment is available at <http://www.guardian.co.uk/discussion/comment-permalink/14905920>

tween 2002 and 2010. This way we have the advantage of a relatively recent picture of attitudes in the United Kingdom and the opportunity to assess the impact of the inflow of immigrants from poorer European countries with full working rights from the newly expanded European Union. A further benefit from focusing on one country is the relative homogeneity in the sample in terms of political and cultural background, as well as the availability of information on both country of origin and ethnicity in the Labour Force Survey, often unavailable in cross-national datasets. Additionally, computing the regional level variables using the individual dataset of the LFS, rather than the more commonly used pre-aggregated indicators published by the Office for National Statistics and Eurostat significantly improves the available detail of the aggregate measures entered in the analysis and allows me to test new hypotheses that distinguish between native and immigrant unemployment and levels of qualifications, as well as account for the impact of concentrations of immigrant and non-white population in the respondent's occupational category and within the region of residence.

Taking into account the many aspects of immigration in the United Kingdom currently in debate, but also historically, I attempt to provide clear distinction between immigrant status, race, ethnicity and country of origin. In doing so, I test hypotheses that aim to reflect the main theories of immigration attitudes. The impact of ethnic composition and qualifications is emphasised in the case of cultural threat and favour for restriction of ethnically similar and dissimilar immigrants, while country of origin is emphasised with regards to restriction of immigrants from poorer countries outside Europe. Furthermore, attention is given to hypotheses which relate to the regional labour market conditions in the case of feelings of economic threat from immigration.

Empirical findings suggest that native respondents working in occupational categories with a larger share of immigrant population are more likely to prefer full restriction of immigrants from the same ethnicity as the majority of the native population. Contrarily, native respondents working in occupations with a larger share of non-white population are found less likely to evaluate immigration as bad for the economy and less likely to prefer restriction of ethnically dissimilar immigrants. Although the share of black and Southeast Asian population in the region has no impact on anti-immigration attitudes, a larger share of immigrants from poorer countries, both within and outside Europe, is associated with an increase in the probability of favouring full restriction

of incoming immigration from poorer countries. After controlling for individual characteristics, regions with higher average salaries and a larger share of natives with higher or tertiary education are associated with more positive views of immigration across all measures of attitudes.

## **2 Background and motivation**

The post-World War II industrial expansion of northern Europe in general, and the United Kingdom in particular, and its subsequent need for low-skilled labour, resulted in a large inflow of ethnically diverse populations, mostly from the former colonies in Asia, the Caribbean and east Africa, into countries which had been otherwise ethnically homogenous.<sup>2</sup> Despite these inflows being welcomed at first, the oil crises in 1973 led to a halt in economic growth and a significant increase in unemployment, during which time most immigrants settled in the new host countries and were joined by their families. Immigration from poorer countries in eastern and southern Europe came later, after the fall of the Soviet Union in the early 1990s as well as following the 2004 EU expansion. By 2009, the United Kingdom had an estimated 11 percent immigrant population, of which around 65 percent came from outside Europe (Dustmann & Frattini 2011).

The effects of introducing increasing numbers of foreign people into the economy, labour market, welfare system and local culture are regularly debated in the media. Political parties compete unceasingly over which immigration policy better reflects what Britons prefer and Great Britain needs (Hopkins 2011). Control of illegal immigration, provision and costs for asylum seekers, student visas, job competition and crime levels are just a few of the many issues commonly associated with immigration. Cultural, religious and racial differences, albeit less openly discussed, remain a key part of the immigration debate, with terrorism being a more recent addition. Although many former immigrants have now acquired British nationality, visible racial and cultural differences with the predominantly white British population often blur the line that separates ethnic minorities with British nationality and immigrants. Despite the widespread discussion about the impact of international immigration, recent studies have found no strong evidence to support the claim that there are overall negative effects from immigration on the UK level of unemployment, wages and

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<sup>2</sup>For a brief overview of the history of immigration in Europe see Dustmann & Frattini (2011)

skill distribution in the workforce (Dustmann et al. 2005).

Yet previous research suggests that people in Great Britain exhibit one of the highest levels of anti-immigration sentiments among the wealthier European Countries. Pehrson & Green (2010) found that up to 35 percent of UK respondents can be classified as having restrictionist views on immigration, compared to 22 percent in Germany, 33 in France and 24 in the Netherlands (Scheepers et al. 2002, Green et al. 2010). Another cross-national study estimated that in comparison to other European countries, years of education in the UK have one of the largest negative marginal effects on anti-immigration preferences (Hainmueller & Hiscox 2007). These findings suggest that opinions over immigration in the United Kingdom can be seen as polarised with education playing a significant role in shaping reactions to immigration. In the European Social Survey, on average, more than 40 percent of the native respondents in the United Kingdom between 2002 and 2010 evaluated immigration as bad for the economy, as undermining the native culture or as worsening life as a whole. Furthermore, 54 percent of respondents were in favour of restricting immigration either partially or entirely when it comes to immigrants from poorer countries outside Europe (see appendix TABLE A.1).

Some of the earliest studies focusing on natives' racial and anti-immigration sentiments in the United Kingdom date back to the 1970s. They found that prejudicial attitudes towards immigrants from the Caribbean, India and Pakistan are associated with political party affiliations (Schaefer 1973) and social networks (Elkin & Panning Summer, 1975). Schaefer in 1975 used data from the 1966-1967 Survey of Race Relations to examine regional differences in prejudice in England and found that although national differences are not associated with the presence or absence of immigrants, prejudice is higher in towns where residents have greater personal experience with immigrants. Respondents in South West and North West England exhibit the highest levels of prejudice, whereas residents of the South-East, the lowest (Schaefer 1975). Dustmann & Preston (2001) use data from the British Social Attitude Survey between 1983 and 1990 and find that self-selection in location decisions of individuals within small geographical areas, such as ward or district has the potential to result in biased estimations of the relationship between ethnic concentrations and attitudes towards minorities, if location decisions are partly driven by attitudes towards minorities. They find that this bias leads to a more positive image of intergroup relations. Finally,

one of the more recent studies on racial attitudes in England examines the impact of the racial and ethnic composition at the local level (Bowyer 2009). Bowyer finds that members of the white English population do not view all ethnic minority groups as equally threatening. The probability of expressing prejudice increases with the relative size of immigrants from Pakistan and Bangladesh, while it decreases with the size of the black population.

However insightful in terms of contextual influences, the extent of exposure and contact with specific ethnic groups does not fully address all factors involved in the immigration debate in the United Kingdom specifically and Europe more broadly. Public policy has been under increasing pressure to limit immigration inflows on the grounds of competition over limited job opportunities, mismatch between skill demand and supply, slow economic growth and incurring costs on the welfare system. Furthermore, cross-national research has found that the national unemployment rate, GDP and foreign direct investment can play a role on the likelihood of expressing anti-immigration attitudes (Mayda 2006, Rustenbach 2010). This examination therefore, aims to contribute to existing literature by empirically testing the extent to which negative opinions over immigration in the UK are associated with the current state of the labour market and average skill supply of natives and immigrants, in addition to population composition in terms of origin and ethnicity.

### **3 Overview of theories**

A variety of socio-economic theories have been used in previous research to explain the determinants of anti-immigrant sentiments. Some theories point towards more rational explanations such as realistic conflict and labour market competition while others focus on social-psychological and affective processes such as prejudice, ideology and social dominance. Overall, previous literature is based on slightly different definitions and combinations of three key concepts; rational conflict, group identity and context (Hempstead & Espenshade 1996). Although past research has combined different theories, rational and social-psychological components often lead to different expectations about the causes, mechanisms and determinants of immigration attitudes (Burns & Gimpel 2000, Krysan 2000, Sniderman et al. 2004).

### **3.1 Social-psychological sources of conflict**

Many analyses of opinion formation trace the causes of anti-immigrant attitudes on social-psychological, affective, or ideological explanations (Chandler & Tsai 2001). The majority of social-psychological explanations find that the starting point is the need to be different and categorise people in groups, while the driving force which leads to conflict between these groups is an instinctive drive for social dominance (Krysan 2000, Duckitt & Sibley 2010, Kupper et al. 2010). According to the symbolic interactionism approach, individuals develop their conception of themselves and others through the process of interaction with other actors (Chandler & Tsai 2001). Through that interaction they develop attachments to groups of actors from which, in turn, they acquire a sense of a shared identity (Herbst & Glynn 2004). Social identity theories argue that people's sense of who they are stems from what groups they belong to or identify with (Sniderman et al. 2004). Social identities satisfy both the need for inclusion for the members of the group, as well as differentiation from members of other groups.

This identification often leads to in-group favouritism and subsequently to a sense of group superiority (Krysan 2000). The mentality of group dominance is also linked to generalisations about sets of group traits or characteristics which are typical of members of that group, usually referred to as stereotypes (Herbst & Glynn 2004). Stereotypes are used because they reinforce differentiation with members of the other group, create extra boundaries between groups and make it more difficult for members to shift sides. Examinations focusing on group identity find that the arrival of an out-group triggers a defensive reaction and feelings of threat, because of the group's instinctive drive for domination (Quillian 1995, Krysan 2000, Duckitt & Sibley 2010). Perceived threat is then translated into an irrational antipathy which is accompanied by faulty generalisations such as prejudice, or an overreaction about the negative consequences of immigration (Quillian 1995).

Social-psychological driven explanations of attitudes are given by theories such as symbolic racism (Bobo 1983, 1999, Oskamp & Schultz 2005), psychological outlook (Sniderman & Citrin 1971, Citrin et al. 1997), group identity (Brade et al. 2008), stereotypes (Burns & Gimpel 2000) and social dominance (Blumer 1958, Quillian 1995, Bobo 1999). They find that natives often blame

immigrants for increased crime and an overall deterioration in the quality of life. Additionally, it has been found that expressed threat or preferences for immigration restriction often occur as a result of perceived unwelcome alterations to the traditional ethnic culture and language resulting from the interaction with culturally diverse immigrants (Huijnk et al. 2010). Individuals with low self-esteem have been found more likely to develop feelings of threat towards immigrants (Sniderman & Citrin 1971). Other determinants of anti-immigration opinion have been found in beliefs about human rights, multiculturalism and ideological orientations (Chandler & Tsai 2001, Slaughter & Scheve 2001). Individuals who score higher on the right-wing authoritarian scale (RWA) and social dominance orientation scale (SDO) are more prone to oppose immigration (Cohrs & Stelzl 2010).

### **3.2 Rational sources of conflict**

Rational explanations build upon the calculation of material and non-material costs and benefits of immigration for the native population, both at the individual and aggregate level. According to these, the driving force behind the formation of an individual's attitude towards immigrants is this calculation (Hempstead & Espenshade 1996). Costs and benefits might be either actual and objective or perceived, but their evaluation is in the end what shapes an individual's negative or positive predisposition and subsequently his opinion. Costs and benefits might be centred around an individual's interest, in respect to his personal characteristics, or the interests of the group he belongs to. Previous literature refers to those interests in many ways, some of which concern more narrow interests deriving from an individual's strictly personal circumstances, such as his labour market status and occupation classification, gender, age and income. Others are defined broadly, to include more general and sociotropic evaluations of interest resulting from a broader sense of community or national good (Oskamp & Schultz 2005). Interests can be economic and political, based on class or ethnicity, strictly material or related to power and privileges. The key concept in this discussion is scarcity, such as the limited availability in resources, jobs, houses, political power and all sorts of privileges (Quillian 1995, Citrin et al. 1997). The utilitarian assumption is that people have an instinctive drive to be better off and since all these goods come in limited amounts,

their allocation is what causes conflict (Hempstead & Espenshade 1996). Conflict differentiates and separates individuals while placing them in distinct groups that in turn have distinct group interests.

According to rational interest theories, prejudice, threat, stereotypes and other negative affective reactions to immigrants are not a cause of anti-immigrant sentiments, but a consequence of resource scarcity and institutionalised inequalities in our societies (Krysan 2000). Racism and prejudice are thus interpreted as mere group bias resulting from group competition. Competition occurs when the two groups are pursuing the same goal in a zero-sum game. Any gain of the first group represents a loss for the second group, resulting in the sum of outcomes being zero (Rajecki 1990). Previous literature traces the source of bias between natives and immigrants in two types of competition. One is labour market competition (Bonacich 1972) and the other is competition as a function of the group's social position (Blumer 1958, Quillian 1995).

### **3.2.1 Labour market competition**

Labour market competition theories argue that individual preferences over immigration policy merely reflect the individual's interests deriving from his or her labour market status. Labour market competition sees immigrants as incoming worker flows in the host country's economy. The consequences of the immigrant flows for the native work force are the ones that determine the natives' reactions towards immigrants as individuals (Borjas 1999, Slaughter & Scheve 2001).

Most analyses on labour market competition begin with the assumption that wealthy countries attract poor immigrants who come seeking to improve their economic prospects and circumstances (Citrin et al. 1997). These tend to be low-skilled and low-educated and mostly come from developing countries. Therefore, in large-scale immigration inflows, a large population of low-skilled workers, willing to provide services for less money, enters the labour market. This results in a split labour market, where there is a large differential in price for labour for the same occupation (Bonacich 1972). This produces a three-way conflict between the two groups and 'business', which is seeking to maximise benefit by replacing higher paid labour with cheaper labour from immigrants. The difference between the two prices of labour for the same occupation is not directly a result of immigrant status or ethnicity, but of difference in resources and motives, which happen to

be highly correlated with ethnicity and immigration. Therefore, ethnic conflict is an ethnic-based group bias which is seen as a result of antagonism in the labour market (Bonacich 1972).

Research has shown that the individual's sources and amount of income, occupation, skill level, employment status, perceived job insecurity and perceptions of national economic conditions have a significant impact on his or her expressed threat from immigration and preferences on immigration restriction. Previous examinations have shown that respondents whose skill level, amount of income and overall economic outlook place them in the category of native population that is mostly affected by the immigrant inflows in the labour market will be more likely to oppose immigration (Noel & Pinkney 1964, Hempstead & Espenshade 1996, Citrin et al. 1997, Burns & Gimpel 2000, Rajzman et al. 2003).

### **3.2.2 Competition as a function of the group's social position**

The theory of competition as a function of the group's social position suggests that prejudice is a result of collective threat and emerges as groups develop a sense of social position relative to one another (Blumer 1958). The 'dominant' or majority group, in this case the native population, develops the view that certain resources belong exclusively to them. Therefore, anti-immigrant sentiment is

*” [...] just a defensive reaction against explicit or implicit challenges to the dominant group's exclusive claim to privileges.” (Quillian 1995, p. 588)*

In agreement with this, realistic conflict theory posits that the 'subordinate' or minority group is a threat to real resources and accepted practices of the dominant group (Bobo 1983).

The two explanations manage to account for anti-immigrant reactions more adequately than examinations based on a strictly defined competition in the labour market. This is because, while still including labour market competition predictions, they can also account for group bias that goes beyond the narrow definition of individual self-interest and explain an observed sense of collective threat shared by members of the dominant group. Perceived effects do not always coincide and should not be confused with the actual effects of the immigration inflows. Group cues through media and public discourse consistently draw a picture of who the immigrants are and the negative

consequences of their presence in the country, in respect to culture, economy and crime (Brade et al. 2008, Hopkins 2011). Therefore, actual posed economic threat of immigrants to low-skilled native workers is as relevant as whether the low-skilled workers themselves along with other natives are convinced that they are indeed being threatened. Additionally, previous findings suggest that individuals think the economy absorbs immigrant inflows not only by taking up jobs and partly changing wages but that the welfare state also responds to the new incoming poor population by eventually raising the general level of taxes (Slaughter & Scheve 2001). Hence, even though threat might be more salient in specific locales and job categories, a perceived collective threat of tax raise and destabilisation of the economy traces concerns about immigration to more general and collective perceptions, rather than immediate personal circumstances (Citrin et al. 1997).

### **3.3 Contextual influences**

In line with rational-based explanations of anti-immigration opinion, we find more and more literature focusing on the influence of the context in which the individual resides. Theories of contextual effects argue that collective group-to-group threat can have a stronger impact on immigration opinion than individual-to-individual threat. They suggest that not only the personal characteristics of the individual play a role in the formation of attitudes, but also the overall environment exerts a strong influence on the likelihood of an individual developing anti-immigrant feelings or not. In practical terms, the economic situation of the person's neighbourhood, district, region, or nation can exert as much influence on his perceptions and evaluations as his personal economic circumstances can. Therefore, the actual or perceived impact of immigration is filtered by the conditions around the individual (Middleton 1976, Studlar 1977, Quillian 1996, Stein et al. 2000, Branton & Jones 2005, Wagner et al. 2006, Tolsma et al. 2008, Rustenbach 2010). Different surrounding conditions in terms of resource availability and presence of immigrants change the level of saliency of the consequences of immigration (Hopkins 2011).

Two theories address contextual influences on immigration attitudes: Inter-group contact and group conflict theory. Group conflict theory is an extension of rational competition theories and therefore looks at aggregate levels of competition between the two groups. Since the native group's

privileges are threatened by the out-group, then the more scarce the resources and the bigger the out-group, the bigger the aggregate threat (Rowthorn & Coleman 2004).

On the other hand, intergroup contact theory posits that interracial contact and exposure is associated with more positive attitudes towards out-groups (Semyonov & Glikman 2009, Wessel 2009, Johnston et al. 2010). The causal mechanism leading to a reduction in opposition to immigration is mostly based on the assumption that more contact produces more familiarity and therefore reduces group differences. Subsequently, the horizontal separation between natives and immigrants is in a sense minimised (Sigelman et al. 1996, Branton & Jones 2005, Tolsma et al. 2008, Christ et al. 2010). The two theories predict the effects on the exact opposite direction. Intergroup contact theory expects less opposition to immigration as the size of the immigrant group increases, while group conflict theory predicts competition to depend on the economic circumstances in the host country and the percentage of immigrants relative to the native population (Quillian 1995).

Previous research has found a way to reconcile the two contradictory theories by introducing an important conditioning factor. They argue that more contact can increase familiarity and reduce opposition, but this effect is conditioned by the economic circumstances in the area and the cultural distance between the two groups (Studlar 1977, Stein et al. 2000, Branton & Jones 2005, Wagner et al. 2006, Berg 2009, Green et al. 2010). Some propose that contact within deprived areas increases opposition while contact within wealthy areas reduces anti-immigrant sentiments (Branton & Jones 2005, Hjerm 2009). These arguments are in agreement with rational competition theories, since they are basically using resource availability as a conditioning factor for the acceptance of the immigrant population. According to these, variations in attitudes may be attributed to overall levels of economic development, wealth, availability of jobs, burden on the welfare and tax system and a combination of skill supply and demand in the local labour market (Tolsma et al. 2008, Rustenbach 2010).

Other examinations extend hypotheses to include differences between neighbourhoods, metropolitan areas, districts and levels of urbanisation. They find that proximity and diversity promotes tolerance within neighbourhoods but in metropolitan areas, larger numbers of immigrants promote more negative racial attitudes (Wong & Oliver 2003). Additionally, literature shows that in larger geographical units such as national states, the percentage of ethnic minorities becomes a topic

of political debates that often emphasise economic and political threats (Blalock 1967, Hopkins 2011). Thus negative attitudes may emerge as a result of the influence of negative political propaganda (Wagner et al. 2006).

## **4 Theoretical framework**

Social-psychological and competition-based explanatory theories are not necessarily mutually exclusive. An attempt to unify insights from both sets of literature can improve our understanding and predictions regarding anti-immigrant attitudes. Embarking from a rational conflict perspective, I use the theoretical framework provided by the theory of competition as a function of group position while including a group bias element. The underlying cause for conflict between natives and immigrants is seen as competition over the allocation of scarce resources and privileges. Individuals seek to maximise benefit within this perceived competition but choose to achieve that by forming groups. The formation of group identity and the development of stereotypes are seen as psychological and affective components that derive from the need to maximise benefit by claiming the available resources for the individual and the group he belongs to. Racism and sense of superiority between groups is seen as an affective response, which reflects an underlying need to compete for privileges with other groups. Feelings of threat to the economy and culture of the native country is seen as the by-product of the perceived costs and benefits from immigration for the native population.

### **4.1 Hypotheses**

An increase in anti-immigrant attitudes occurs when there is an increase in actual or perceived competition. Competition increases by either raising the relative size of the minority group, or by decreasing the available resources. Thus, individuals who perceive the immigrant population as being large or evaluate the state of the economy as worrisome will be more likely to oppose immigration.

### 4.1.1 Individual level hypotheses

Direct competition is expected from individuals whose labour market status, income and class group places them in direct competition with the immigrants. Individuals in low-skilled occupations, the unemployed, people working without a contract and manual workers are expected to be in direct competition with immigrants for work and therefore more likely to view their presence as problematic.

### 4.1.2 Regional level hypotheses

The regional level hypotheses cover three main categories of contextual influences, the population context, the labour market conditions and the skill availability in the region. Table 1 presents the operationalised regional variables along with their effects as predicted by the three dominant theories of contextual influences; ethnic competition, contact theory and cultural distance.<sup>3</sup>

**Table 1:** Theories, Regional Hypotheses and Expected Effects

Variables Tested	<i>Ethnic Competition</i>	<i>Contact Theory</i>	<i>Cultural Distance</i>
<b>Population Context</b>	Expected	Expected	Expected
% Immigrants	+	-	
% Non white immigrants	+	-	+
% White immigrants	+	-	-
% Immigrants from poorer non European countries	+	-	+
% Immigrants from poorer European countries	+	-	-
% Indian, Pakistani or Bangladeshi population	+	-	+
% Black Population	+	-	+
<b>Labour Market Context</b>			
% Unemployed natives	+		
% Long-term unemployed natives	+		
% Unemployed immigrants	+		
% Immigrants by occupation	+	-	-
% Non white by occupation	+	-	+
Median pay	-		
<b>Skills Context</b>			
% Immigrants high qualifications	+	-	-
% Natives high qualifications	-		-
% Immigrants no qualifications	+	-	+
% Natives no qualifications	+		+

Ethnic competition makes predictions relating to all three categories of influences but focuses on resource competition rather than race and ethnicity. Contact theory does not directly address

<sup>3</sup>Details and definitions for the operationalised variables follow in the data and measurement section

issues of resources but takes into account the impact of acculturation and immigrant integration. Lastly, cultural distance extends contact theory by considering the conditional effect of ethnicity and origin on anti-immigration attitudes.

According to ethnic competition, residents of regions with higher concentration of immigrants, regardless of race or origin, are expected to view immigration as more burdensome or damaging to their interests. In reference to the labour market context, regions with higher levels of unemployment among the native population and lower wages are also expected to foster competition between natives and immigrants. The same is predicted for respondents in regions and occupational categories with a higher concentration of immigrants. In these regions and occupations, immigrants will be seen as creating even more pressure to the already limited resources and job opportunities. By contrast, in prosperous regions with low unemployment and higher average incomes, individuals are expected to evaluate the immigrant population as less threatening. In terms of the regional skill context, since immigrants are often seen as competing with natives for low skilled, manual occupations, respondents in regions where the native population is highly skilled are expected to be on average more open to immigration due to the two groups competing for different places in the labour market. The opposite is predicted for those in regions where the native population is mostly low skilled.

Although contact theory does not address hypotheses relating to the labour market and skill context, it reverses the predicted impact of immigration. Contact theory argues that regions with more immigrants lead to increased exposure among the two groups, which in turn produces familiarity and reduces exclusionary reactions. Cultural distance theory posits that contact with the minority group reduces conflict in the case of immigrants who are closer culturally with the native population but increases exclusion of immigrants who are viewed as ethnically distant.

## **5 Data and measurement**

The hypotheses posed in this examination are tested on data from the UK sample of the European Social Survey with the addition of regionally aggregated indicators computed from the British Labour Force Survey.

I use the first five rounds of the ESS, which is a biennial repeated cross sectional survey, between 2002 and 2010 and focus only on the United Kingdom.<sup>4</sup> The ESS is chosen for this analysis because of its broad coverage of questions on attitudes towards immigrants and immigration and its exhaustive range of questions on individual characteristics and perceptions on a variety of issues. Since this study focuses on the natives' attitudes towards immigrants, those who were not born in the UK, those who do not hold British citizenship and those who identified themselves as belonging to a minority ethnic group are excluded from the sample. The final sample size is approximately 6,700 individuals.

## 5.1 Dependent variables

The six dependent variables computed for this analysis are chosen because they are consistently available across all rounds of the survey and cover a sufficient range of different expressions of attitudes towards immigration. For the purposes of this paper the six variables are organised into two main groups. The first three, threat-related measures ask respondents to evaluate the impact of immigration on the country's economy, cultural life and life overall. The other three are referred to as restriction policy measures and ask respondents about limiting the number of immigrants of different origins and ethnic groups. All six are recoded into binary variables used in logit regressions. The question items are shown below.<sup>5</sup>

### Measures of Threat

- Immigration is Bad/Good for the country's Economy
- Immigration Undermines/Enriches country's cultural life
- Immigration makes country Worse/Better place to live

*[0 Bad / 10 Good]*

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<sup>4</sup>Data is publicly available at [www.europeansocialsurvey.org](http://www.europeansocialsurvey.org)

<sup>5</sup>For full wording of original question items see ESS questionnaire in the following link: [http://www.europeansocialsurvey.org/index.php?option=com\\_contentview=articleid=61Itemid=351](http://www.europeansocialsurvey.org/index.php?option=com_contentview=articleid=61Itemid=351)

## Measures of Restriction Preferences

- Allow None/Few/Some/Many Immigrants from the same ethnic/race group as majority
- Allow None/Few/Some/Many Immigrants of different ethnic/race group from majority
- Allow None/Few/Some/Many Immigrants from poorer countries outside Europe

*[4 None/3 Few/2 Some/1 Many]*

The three threat-related questions are recoded into 1 for 0-4 and 0 for 5-10. The three restriction policy related questions are recoded as 1 for allow none and 0 for allow few, allow some and allow many. Effectively, the dependent variables are set in a way as to account for intentions of restricting immigration entirely and/or evaluating immigration as bad, undermining and worsening (For frequency statistics on the six dependent variables, see Appendix TABLE A.1).

The focus of this paper is largely on understanding attitudes towards immigrants and therefore the choice of dependent variables and their measurement is crucial. I choose to test hypotheses on six different measures separately, instead of building an index or conducting factor analysis. Combining different attitudes into one or two factors has the advantage of summarising the information in a more concise, compact way but it sacrifices detail which is essential to the questions posed in this paper. Treating economic threat, cultural threat and restriction preferences towards different race groups separately allows the model specifications to reflect different causal hypotheses depending on the nature of the attitude. For example, economic threat is expected to be related to economic competition, cultural threat to contact and cultural distance whereas restricting immigrants from poorer countries is expected to be associated with country of origin (for further discussion on the measurement of attitudes see Section 8.3 on sensitivity analysis).

## **5.2 Explanatory variables - individual level**

Demographic characteristics include gender, age in four categories (up to 25, 26-39, 40-59 and above 60) and dummy variables for individuals who are stated as residing in big cities, suburbs of big cities or rural areas in comparison to those who are stated as living in smaller cities and towns. Educational attainment is measured using an ESS derived variable with standardised categories for less than lower secondary education, lower secondary, upper secondary and tertiary education.

Labour market status is operationalised using various measures. The ISCO-88 (International Standard Classification for Occupations) is used for the classification of 10 major occupation categories from managers and senior officials to elementary occupations. Occupations have been recoded into two binary variables, one for managers, senior officials and technicians and one for those in elementary occupations, operation and processing and sales/customer services, with individuals in personal services, skilled trades and administration as the reference category. An ESS derived variable on working status is entered as dummies for ILO unemployed, retired and in paid work individuals leaving all other inactive as a reference category. A dummy variable on whether the individual's job contract is unlimited in contrast to limited or no contract work is entered as a control of job security. A dummy for supervisory duties at work and another for union/trade organisation membership are also entered in the analysis. Due to the lack of a compatible variable related to income across the five rounds of the ESS, a proxy for individuals with high incomes is included and corresponds to a dummy variable for those with more than £760 of weekly household income (this covers 17 percent of the sample). In terms of perceptions, economic optimism and satisfaction are operationalised with two dummy variables; the first asks respondents to state how satisfied they are with the current state of their country's economy from 0 extremely dissatisfied to 10 extremely satisfied (0-4 recoded as 1 and 5-10 as 0) while the other asks whether the respondents are finding it difficult or coping comfortably on their present income (1-living comfortably and 2-coping are recoded as 0, 3-difficult to cope and 4-very difficult are recoded as 1). For summary statistics on individual level variables, see Appendix Table A.2.

### **5.3 Explanatory variables - regional level**

In order to test the impact of contextual factors on attitudes towards immigrants, data from the UK Labour Force Survey are used to compute regionally aggregated indicators. The Labour Force Survey is a large scale quarterly survey which, under a European Union directive and with internationally agreed definitions and concepts, is carried out by the Office for National Statistics to 60,000 private addresses in the UK. Its purpose is to provide information on the UK labour market that can be used to evaluate and develop labour market policies. The Office for National Statistics

uses the LFS data in order to compute many official state statistics related to the labour market, such as unemployment rates, median wages and others.

Taking into consideration the interview dates that the ESS was conducted, aggregate measures are computed using the October to December quarter of the survey year. For respondents in Round 1, aggregate data are taken from the UK LFS Oct-Dec Quarter of 2002, for Round 2 Oct-Dec 2004, for Round 3 Oct-Dec 2006, for Round 4 Oct-Dec 2008 and for Round 5 Oct-Dec 2010. The indicators computed for this analysis are aggregated at the regional level (NUTS1)<sup>6</sup> to match the geographical level available on the ESS. The variables are computed by aggregating the corresponding individual level measure from the LFS with the use of population corrective weights that are supplied with the survey for this purpose. These aggregate variables are then merged with the ESS dataset. Each individual in the ESS is assigned a value for each aggregate indicator according to the Government Office Region of residence and round of the ESS. For a full list of regional level computed variables and summary statistics, see Appendix Table A.3.

### **5.3.1 Population variables**

Measures related to the overall percentage of immigrants as well as percentage of groups by race, ethnicity and origin are entered in the analysis to account for general exposure and contact between the two groups. These variables enable me to test whether larger or smaller concentrations of different immigrant groups increase individual negative evaluations, while controlling for the impact of race, ethnicity and origin. The percentage of non-white immigrants encompasses all groups of foreign-born who are ethnically non-white, regardless of country of origin whereas the percentage of black and south-east Asian population also include people born in the UK. This distinction allows me to account for the possible impact of cultural distance in the case of second and third generation immigrants. In more detail, the classification of an LFS respondent as native or immigrant is based on the country of birth. Individuals who are born outside the UK are classified as immigrants, regardless of whether they have been naturalised later. Variables based on racial and ethnic groups such as white or non-white immigrants or percent black or Southeast

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<sup>6</sup>The NUTS1 classification refers to the Eurostat Nomenclature of Territorial Units for Statistics, which in the United Kingdom is represented by 9 government office regions for England plus Wales, Scotland and Northern Ireland. These are as follows: North East, North West, Yorkshire and the Humber, East Midlands, West Midlands, East of England, London, South East, South West

Asian population are computed using the equivalent LFS question on ethnicity. The percentages of immigrants from poorer countries within and outside Europe are calculated based on the LFS question on country of birth.

### **5.3.2 Labour market variables**

In order to test the impact of occupational competition between natives and immigrants, the percentage of immigrants and non-whites by major occupation group is included in the analysis. In this case, each respondent in the ESS is assigned a value based on the percent of immigrants or the percent of non-whites in his or her occupational category within his/her region and round of ESS. For example, a respondent from round 1 who lives in the West Midlands and works in an administrative occupation is assigned the percent value of immigrants in administrative occupations for the West Midlands in 2002. Occupational categories correspond to the 10 major occupational categories from the SOC 2000 (Standard Occupation Classification). Another set of measures correspond to the percent of economically active natives and immigrants who are unemployed and are included to establish whether competition is rooted in the limited availability of jobs in the region. However, to get a better account of regional job scarcity, the percent of natives unemployed for more than a year is also computed. The unemployment rates for natives and immigrants are calculated using the ILO standardised method for assigning unemployment status. The percent of economically active native population that is unemployed for more than a year is computed using an LFS derived variable on duration of ILO unemployment. Additionally, median earnings are computed as a measure of the average levels of income from salary for employed persons. Regions with higher average salaries reflect more resource availability and are expected to decrease competition. Median earnings for each region correspond to weekly gross pay reported in the LFS, weighted with an income weighting factor supplied with the survey.

### **5.3.3 Skills variables**

In relation to the skills context, the percentages of economically active natives and immigrants with high or no qualifications are computed. In previous literature, the relationship between the average skill level of natives compared to immigrants has been discussed as playing a role in reactions

to immigration, but with contradictory effects. Labour market competition predicts that regions with highly skilled natives would oppose highly skilled immigrants and vice versa (Gorodzeisky 2011). On the other hand, social capital and contact theory suggest that education promotes tolerance and therefore, regions with more educated natives will be altogether more welcoming to out-groups (Herreros & Criado 2009). Qualification levels are assigned based on a standardised derived LFS variable on qualifications obtained, with six initial categories. High qualifications are coded to correspond to degree or equivalent and higher education, while no qualifications refer to the equivalent category in the initial variable.

## **6 Empirical models**

I estimate a total of eighteen logit regression models, three models for each of the six dependent variables. On each dependent variable, I first estimate the model using only the individual level controls and then move on to include the regional level measures in two additional specifications. The first, individual-level only models are seen as necessary in order to get a better image of which variation is a result of who the respondents are and in which round of the ESS they participated and whether significant changes occur once the regional predictors are added. The second and third models incorporate regional level hypotheses and assess the variation in individual attitudes that could be attributed to the respondents' regional environment.

While the individual level controls are the same across all estimated models, the regional level hypotheses posed in this paper differ depending on the type of anti-immigrant attitude in question. Each model includes aggregate level indicators relating to all three categories of contextual influences but it is specified with reference to and focus on the type of anti-immigrant attitude expressed in each dependent variable. In more detail, the effects of the ethnic composition and qualifications are emphasised in the case of expressing cultural threat and favour for restriction of ethnically similar and dissimilar immigrants, while country of origin is emphasised with regards to restriction of immigrants from poorer countries. Attention is given to hypotheses which relate to the regional labour market conditions in the case of feelings of economic threat.

As mentioned in the data and measurement section, individuals are nested within regions and

rounds. An individual who participated in the ESS in Round 2/2004 and resides in the West Midlands shares the contextual characteristics of any respondent in round 2/2004 of ESS residing in the same region. In the case of estimating the propensity of those two individuals to express threat from immigration or to favour restriction, clustering standard errors by region and round is seen as the optimal estimation approach since it treats observations as independent across the clusters but not independent within the clusters and corrects for the effect of hierarchical data (Long & Freese 2003, Hosmer & Lemeshow 2001).

The probability  $Pr$  of an individual  $i$  in region  $r$  and round  $t$  expressing threat from immigration or preferring restriction ( $y=1$ ) can be specified as a function of individual and regional level predictors:

$$Pr_{irt}(y = 1|x) = \frac{\exp(z)}{1 + \exp(z)} = \frac{1}{1 + \exp(-z)}, \text{ where } z = \beta_0 + \beta X_{irt} + \beta R_{rt} \quad (1)$$

Where  $X$  and  $R$  stand for a vector of individual and regional level predictors, respectively. All models include a range of demographic and individual level controls such as gender, age, major occupation group, level of education, urban or rural residence, dummies for round of ESS and individual perceptions of the country's economy and household income. A dummy for London is also entered in the analysis to control for the disproportionately large concentration of immigrants and non-whites in the London region compared to the rest of the United Kingdom.

Recent literature has focused on small area estimations such as ward, district or neighbourhood rather than region. Albeit more representative of the individual's immediate cohort, small geographical areas are more prone to self-selection bias (Dustmann & Preston 2001). This is because individuals can choose to live in certain areas and neighbourhoods depending on their level of income and attitudes towards ethnic groups that might concentrate, for instance, in particular urban neighbourhoods more than others. Additionally, smaller geographical areas provide for less robust aggregated measures compared to regions due to the limited sample size from which indicators are computed. They are also most informative with regards to ethnic and immigrant composition but less relevant in the case of skill availability and labour market conditions, since individuals often look for work or commute to work within larger geographical areas. On the other hand, regions in

the United Kingdom are large and although one can argue they are not ideal for measuring close inter-group contact, they are more suitable for testing the impact of skill supply and labour market conditions. Other than administratively separate, each region in the United Kingdom has its own distinct make up, structure and dynamic. Regions in the United Kingdom vary significantly not only in their composition of immigrant population but also in their economic structure, unemployment level and average skill of natives. The region of residence can therefore exert an immediate or direct influence on how native respondents perceive the impact of immigration in the country. The final model specifications are chosen to reflect the questions addressed in this paper while presenting results that remain robust and can be empirically useful.

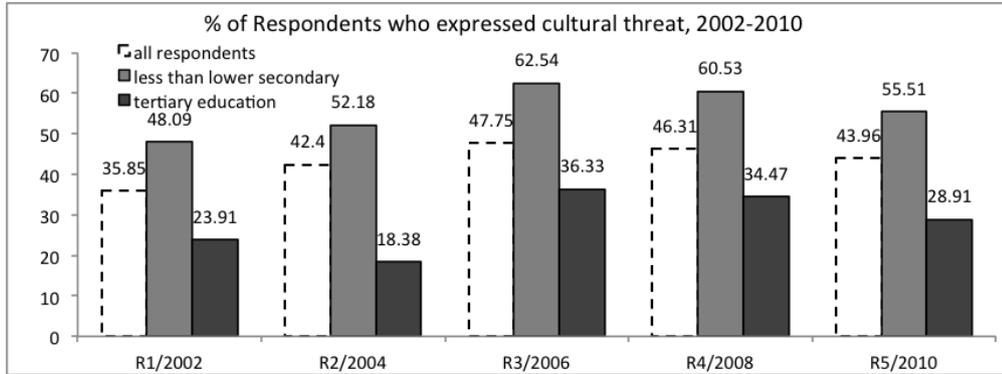
## **7 Descriptive statistics**

Before moving on to hypothesis testing and analysis, the following figures present a preliminary image of reactions to immigrants from white native respondents in relation to educational levels, major occupations and immigration percentages. Measures for the current regional environment are presented in conjunction with different types of immigration attitudes. These figures can facilitate the identification of the relationships between key factors and inform the choice of explanatory variables.

Figure 1 shows the mean percentage of respondents who expressed concern over the impact of immigration on the native culture across the five rounds of the survey, as well as the equivalent mean percentages for respondents with less than lower secondary education and for those with tertiary education. Although the data are not longitudinal and changes across rounds should be taken with caution, the overall average of respondents who expressed cultural threat tends to increase between rounds 1 and 3 and then declines in rounds 4 and 5. Respondents with less than lower secondary education appear more likely to report threat compared to respondents with tertiary education. In most rounds, the percentage of respondents with less than lower secondary education who see immigration as undermining the native culture is as much as double compared to those with tertiary education. Nonetheless, the percentage of respondents with tertiary education who expressed cultural threat doubled from 18% to 36% between 2004 and 2006. This increase repre-

sents the largest difference across all rounds and groups and could be related to the 2005 terrorist attack in London and its association with radical Islam.

**Figure 1: Cultural Threat and Education in UK 2002-2010**



As shown in figure 2, regions in the United Kingdom vary in terms of concentration of immigrant population but also in relation to evaluating the impact of immigration on life in the country. London is the region with the highest percentage of immigrants but also the lowest percentage of native respondents who think immigration has made life in the country worse. Inter-group contact theory would claim that more exposure and contact with immigrants has resulted in increased acceptance and thus explains London having the lowest percentage of respondents with negative evaluations. However, West Midlands and Yorkshire exhibit the highest overall threat with 62% and 55% of respondents respectively, although immigrant concentrations are neither very high nor low compared to other regions of the UK.

**Figure 2: Overall Threat and Immigrant Population in UK Regions, 2010**

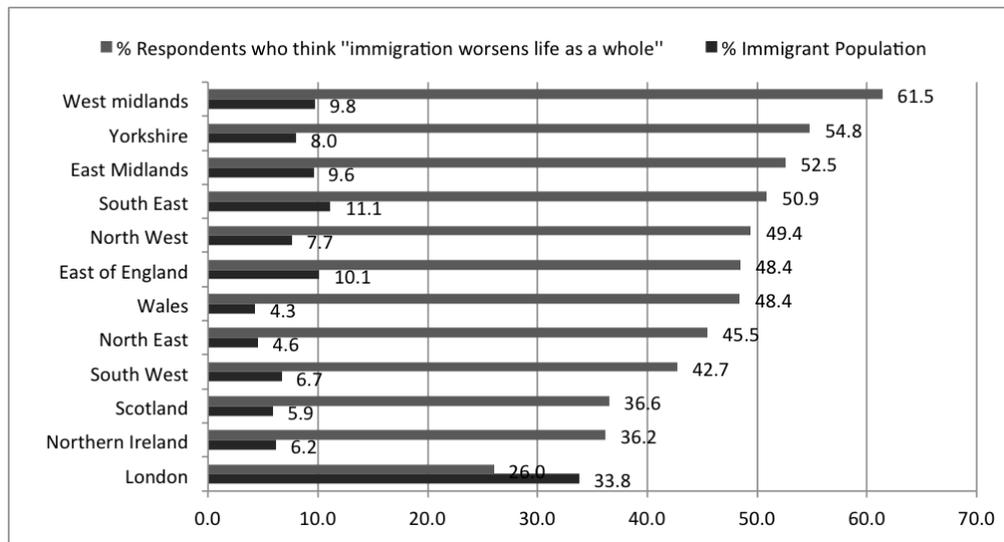
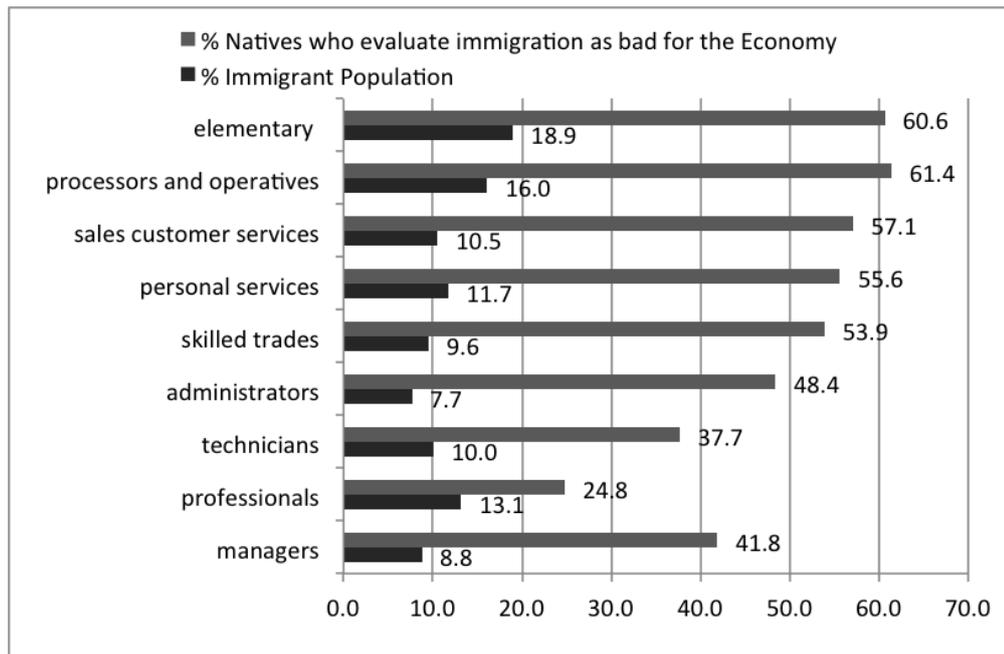


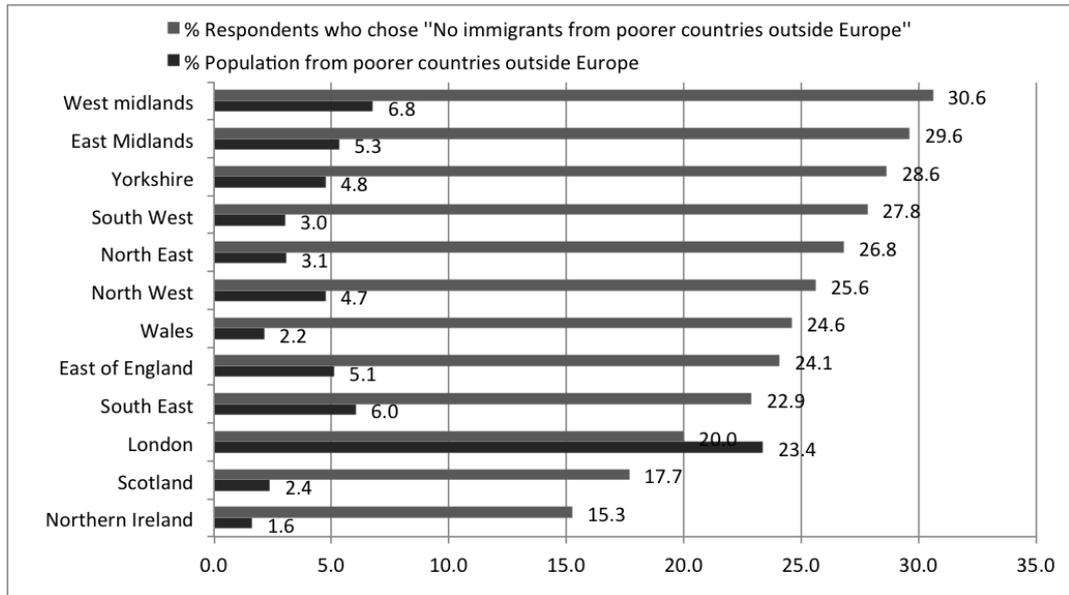
Figure 3 shows an occupational breakdown of the percentage of immigrants versus the level of native respondents' economic threat in the UK. This occupational breakdown helps to present a very commonly discussed immigration issue, which is the distribution of the immigrant population among the different classes in broad terms but more specifically among occupational groups. Elementary occupations indeed have the largest concentration of immigrants with almost 19% of workers, while administrative occupations have the lowest 7.7%. The percentage of respondents who evaluated immigration as bad for the country's economy is the highest among individuals in occupations related to machine operation and processing with 61.4% and lowest among professional occupations with 24.8%. What appears in this bar chart does not support the common labour market competition theory expectation that occupations with more immigrants would exhibit higher economic threat. Professionals are the occupational group with the third highest percentage of immigrant population while exhibiting the lowest aggregate economic threat. Surprisingly and in contradiction to labour market competition hypotheses, a higher percentage than expected of managers and senior officials express economic threat from immigration with almost 42% of managers evaluating immigration as harmful to the country's economy.

**Figure 3: Immigrant Population and Economic Threat in UK Occupations, 2010**



Other than evaluating the impact of immigration, another more direct expression of ethnic exclusionism can be seen in the measures related to restricting immigrants from poorer countries outside Europe. Figure 4 shows that between 15.3 and 30.6% of native respondents in different regions of the United Kingdom stated they preferred that no immigrants be allowed to come to UK from poorer countries outside Europe. The West Midlands have the second highest percentage of immigrants from poorer countries outside Europe with 6.8% of the overall population and the highest percentage of native respondents who favour their restriction. This however can be misleading, because compared to 6.8% in the West Midlands, London has 23.4% of its population born in poorer countries outside Europe but also the third lowest percentage in favour of restriction among the white native respondents.

**Figure 4:** Immigrants from Poorer Countries Outside Europe and Restrictionist views, 2010



## 8 Results and analysis

The estimated effects of the individual and regional level explanatory variables on the six measures of immigration attitudes are organised into two sections. One focuses on what drives individual respondents to evaluate the consequences of immigration as bad or undermining of the host country and tests hypotheses on the three threat dependent variables. The second section focuses on what drives individual preferences over immigration policy for different ethnic groups and origins and discusses the three restriction policy related dependent variables.

### 8.1 Economic, cultural and overall expressed threat

The empirical results of the models on the threat related measures are presented in tables 2 and 3. Table 2 shows the results of the individual level logit models before the addition of the regional indicators, while table 3 presents the results of the regional level predictors. The dependent variables in this section point towards different concerns over the impact of immigration in the host country and can therefore be associated with different factors. An individual who thinks that immigration might be bad for the economy due to lowering wages or putting pressure on the job market, might at the same time view cultural diversity as beneficial for cultural life. The third de-

pendent variable asks respondents to give an overall assessment of the impact of immigration for life as a whole. Especially at the regional level, findings confirm this distinction across different attitudes and highlight the various factors driving natives' evaluations of immigration in relation to the economy, culture and life overall.

### **8.1.1 Individual level determinants of threat from immigration**

Respondents between the ages of 26 and 39 appear more likely to view immigration as harmful for the economy compared to those between 40 and 59, while those over the age of 60 are more likely to express cultural threat. Women are more likely than men to evaluate immigration as bad for the economy, although the effect does not remain statistically significant in the other two measures of attitudes. The effect of education is the most consistent across models. Those who have tertiary education are estimated to view immigration between 11 and 13 percentage points less threatening than those with secondary education in all three models, while people with less than lower secondary education appear to express the exact opposite. Individuals with more than £760 of weekly household income evaluate immigration as beneficial for both the economy and culture, although the effect on culture ceases to be statistically significant when the regional context is accounted for.

Being unemployed does not appear to have an effect on evaluating immigration as bad for the economy but at the same time, it seems to decrease cultural threat by 8 percentage points. Individuals in paid work for the past 7 days are more likely to report economic threat compared to respondents who are not economically active. The variable for respondents with an unlimited job contract is chosen as a measure of job security and would be expected to lower economic threat, since an individual with more secure employment prospects would be expected to feel less competitive towards immigrant workers. However, I find that people with unlimited job contracts are not statistically more or less likely to view immigration as bad for the economy compared to those with a limited contract or no contract work, although they are found more likely to express cultural and overall threat. The occupational categories variables are entered in these models because they represent a person's position with regards to labour market status and interest. Even after controlling for education and income, managers, technicians and professionals are 7 to 9 percentage

points less likely to exhibit threat from immigration across all models, compared to respondents in personal services, skilled trades and administration. Respondents in elementary occupations are 4 to 6 percentage points more likely to say that immigration is bad for the economy, that it undermines the country's culture and that worsens life as a whole.

In reference to a person's evaluations of their own economic situation, those dissatisfied with the current state of the economy and those who find it difficult to cope on their present household income are found more likely to express negative evaluations of the impact of immigration across all three domains by approximately 2 and 6 percentage points, respectively. Since information over an individual's residence is not available in a geographical level lower than NUTS1, the residence variables are chosen to provide a better idea of a person's domicile. Results suggest that individuals who stated as living in big cities are less likely to evaluate immigration as undermining of the native culture and life in the country, whereas those who reside in suburbs of big cities are more likely to express economic threat. Those who stated their residence as rural are not found to be statistically more or less likely to express threat from immigration.

**Table 2: Individual level determinants of threat from immigration**

	Economic threat		Cultural threat		Overall threat	
	dy/dx	se	dy/dx	se	dy/dx	se
Female	0.080**	(0.014)	0.009	(0.014)	0.025	(0.014)
Under 25 years old	0.049	(0.026)	-0.021	(0.025)	-0.015	(0.026)
26 to 39 years old	0.062**	(0.017)	0.012	(0.017)	0.025	(0.017)
Over 60 years old	0.038	(0.027)	0.052*	(0.026)	0.031	(0.026)
ILO unemployed	-0.004	(0.041)	-0.079*	(0.038)	-0.003	(0.041)
In paid work	0.041*	(0.019)	-0.005	(0.019)	-0.017	(0.020)
Retired	-0.020	(0.030)	-0.053	(0.029)	-0.007	(0.030)
Supervisory duties	0.014	(0.014)	0.028	(0.014)	0.014	(0.015)
Member of union	-0.025	(0.014)	-0.011	(0.014)	-0.010	(0.014)
Unlimited job contract	0.002	(0.015)	0.036*	(0.015)	0.030*	(0.015)
Less than lower secondary	0.084**	(0.018)	0.082**	(0.018)	0.077**	(0.018)
Tertiary education	-0.113**	(0.016)	-0.130**	(0.016)	-0.132**	(0.016)
>760 weekly house income	-0.054**	(0.019)	-0.039*	(0.019)	-0.025	(0.019)
Managers and professionals	-0.073**	(0.017)	-0.062**	(0.017)	-0.097**	(0.017)
Elementary occupations	0.049**	(0.018)	0.064***	(0.018)	0.041*	(0.018)
Difficult to cope on income	0.074**	(0.018)	0.038*	(0.018)	0.065**	(0.018)
Dissatisfied with economy	0.195**	(0.014)	0.176**	(0.014)	0.209**	(0.014)
Big city residence	-0.034	(0.030)	-0.077**	(0.029)	-0.084**	(0.030)
Suburbs of big city	0.049**	(0.017)	0.022	(0.017)	0.024	(0.017)
Rural residence	0.007	(0.016)	-0.001	(0.016)	-0.002	(0.016)
Round 2	0.007	(0.022)	0.075**	(0.023)	0.003	(0.022)
Round 3	0.037	(0.021)	0.165**	(0.021)	0.096**	(0.021)
Round 4	-0.077**	(0.021)	0.082**	(0.022)	0.005	(0.021)
Round 5	-0.078**	(0.021)	0.046*	(0.021)	-0.043*	(0.021)
London	-0.101**	(0.029)	-0.104**	(0.029)	-0.090**	(0.030)
Observations	6683		6678		6707	
ll_0	-4624.299		-4564.985		-4636.823	
ll	-4287.942		-4240.069		-4262.663	
r2_p	0.073		0.071		0.081	

Marginal effects and standard errors in parentheses; \*  $p < 0.05$ , \*\*  $p < 0.01$

All above variables are binary; Reference categories (0) are as follows: male; 40 to 59 years old; all other main economic activities; non supervisory duties; never been member of union; limited contract or no contract work; lower secondary, upper secondary or other; below 760 weekly household income; admin, skilled trades and personal services; living comfortably and coping of present income; satisfied with current state of economy (5 to 10); town or small village; round 1 of ESS.

### 8.1.2 Regional level determinants of threat from immigration

Table 3 reports the estimated marginal effects and standard errors of the regional level variables on each of the threat related measures of attitudes. Model specifications include individual level controls, but for ease of presentation Table 3 shows results for the regional level variables only.

Results suggest that every point increase in immigrant population in the region, is associated with 2.4 percentage points higher probability of native respondents evaluating immigration as bad for the country's economy. A one point increase in the percentage of non-white immigrants in the region is associated with an estimated 0.3 percentage points increase in the likelihood of a respondent evaluating immigration as undermining of the native culture. While the percentage of immigrants born in poorer European countries is not found to have a statistically significant effect on any of these models, the percentage of immigrants born in poorer non-European countries has a statistically significant positive impact of about 0.5 percentage points on the likelihood of evaluating immigration as worsening life as a whole. Also, regional concentrations of Southeast Asian and black population, including both immigrants and ethnic minorities, do not appear statistically related to individual attitudes towards immigration. These contradict Bowyer's findings from the General Social Survey, where the ward and district proportions of black and Southeast Asian population had a negative and positive impact on racial attitudes, respectively (Bowyer 2009). Findings indicate that, while feelings of threat to culture are associated with non-white immigrants in the region, viewing immigration as worsening the quality of life in the country is associated with immigrants who come from poorer countries outside Europe.

Although the percentage of immigrant population in the region is associated with higher perceived economic threat, a one point increase in the percentage of non-white population in the respondent's major occupational category, within the region of residence, decreases the probability of a respondent to evaluate immigration as bad for the economy by 0.6 percentage points. Contrary to what was expected, the regional unemployment rates for natives and immigrants, as well as long-term unemployment among natives, are not found statistically related to feelings of economic threat. However, respondents in regions with higher median weekly wages are expected to be 0.1 percentage points less likely to think that immigration is harmful to the economy or that

it undermines the quality of life.

In terms of the skills of natives and immigrants in the region, results indicate that a one point increase in the percentage of economically active natives with either higher or tertiary education, respondents are expected to be 0.8 and 0.7 percentage points less likely to evaluate immigration as bad for the country's economy and culture. Furthermore, I find that for every point increase in the percentage of natives in the region who have no qualifications, native respondents are 1.7 percentage points less likely to blame immigration for worsening life as a whole. In respect to average qualifications obtained by immigrants in the region, the percentage of foreign born economically active population with higher or tertiary education is not found to exert a statistically significant effect on feelings of threat from immigration.

**Table 3: Regional level determinants of threat from immigration**

	Economic threat		Cultural threat		Overall threat	
	(1)	(2)	(1)	(2)	(1)	(2)
<i>Population variables</i>						
% Immigrants	0.024**					
	(0.007)					
% Non White Immigrants		0.002		0.003*		
		(0.001)		(0.001)		
% Immigrants from poorer European countries			0.001			0.002
			(0.002)			(0.002)
% Immigrants from poorer non-European countries			0.002			0.005*
			(0.001)			(0.002)
% Southeast Asian population				-0.009	0.003	-0.011
				(0.010)	(0.008)	(0.009)
% Black population				0.035	0.037	0.034
				(0.024)	(0.026)	(0.027)
<i>Labour market variables</i>						
% Immigrants by occupation		-0.000				
		(0.002)				
% Non white by occupation	-0.006*		-0.004	-0.005		
	(0.003)		(0.002)	(0.003)		
% Unemployed natives	0.000					
	(0.010)					
% Long-term unemployed natives		0.012			-0.028	-0.028
		(0.025)			(0.025)	(0.026)
% Unemployed immigrants	-0.001	-0.007				
	(0.005)	(0.006)				
Median pay	-0.001**			-0.001	-0.001**	-0.001*
	(0.001)			(0.000)	(0.000)	(0.000)
<i>Skills variables</i>						
% Natives with high qualifications	-0.008*		-0.007*			
	(0.004)		(0.003)			
% Natives with no qualifications		-0.004	-0.006		-0.017*	-0.004
		(0.006)	(0.006)		(0.008)	(0.007)
% Immigrants with high qualifications		-0.003		-0.003		-0.002
		(0.002)		(0.002)		(0.002)
% Immigrants with no qualifications	-0.001			-0.006*	0.003	
	(0.002)			(0.002)	(0.003)	
Observations	6683	6683	6678	6678	6707	6707
ll_0	-4624.3	-4624.3	-4564.9	-4564.9	-4636.8	-4636.8
ll	-4271.9	-4276.9	-4227.0	-4223.8	-4237.5	-4232.9
r2_p	0.076	0.075	0.074	0.075	0.086	0.087

Marginal effects; Clustered standard errors in parentheses; \*  $p < 0.05$ , \*\*  $p < 0.01$   
Model specifications include a full set of individual level controls as in Table 2

## **8.2 Restriction preferences for race/ethnic groups**

Tables 4 and 5 report the average marginal effects of individual and regional predictors on the restriction policy related measures. In this case, the three measures differ by immigration type. The first is concerned with restriction of immigrants from the same race/ethnic group as the majority of the country's population, the second from a different race/ethnic group from the majority and the third from poorer countries outside Europe. These three questions incorporate an element of ethnicity and race in immigration attitudes and direct attention to possibly hidden prejudices towards different types of immigrants.

### **8.2.1 Individual level determinants of restriction preferences**

Overall, the estimated impact of the individual's characteristics and perceptions is in agreement with previous literature and expectations and remains statistically significant after the inclusion of the regional context. However, my findings reveal some differences in how individual level indicators impact feelings of threat on the one hand, and restriction preferences on the other. Some of the respondent's demographic characteristics found to affect feelings of threat (see previous section Table 2) such as gender, employment status and place of residence do not seem to have a statistically significant influence on immigration policy preferences. Native respondents who are under the age of 25 are less likely to prefer restricting immigration across all three dependent variables, compared to those between the ages of 40 and 59. Respondents with supervisory duties are found to be more likely to favour restriction of immigrants from poorer countries outside Europe. Those who are members of unions and trade organisations are approximately 2 percent less likely to prefer restriction of immigrants from the same or different ethnic group than the majority of population in the United Kingdom.

In accordance with the previous section, those who have completed tertiary education are less likely to oppose immigration regardless of the ethnicity and origin of immigrants, compared to those with secondary education, whereas those with less than lower secondary completed are more likely to prefer restricting immigration altogether. Respondents with more than £760 weekly household income are found to be less likely to hold restrictionist views towards ethnically differ-

ent immigrants and those from poorer countries outside Europe. Those in elementary occupations are more likely to prefer the general restriction of immigration across all measures. Managers and professionals are less in favour of restriction but the effect is somewhat weaker in comparison to the impact of occupation on expressing feelings of threat from immigration, since it remains statistically significant only for ethnically/racially different immigrants and the marginal effect is much smaller. Furthermore, those who report living in big cities are less likely to favour restriction of immigration from poorer countries outside Europe, compared to those living in towns and small cities, while the employed respondents are less likely to favour restriction of immigrants from different racial/ethnic groups. Regarding the impact of individual perceptions over restriction preferences, the evidence suggests that those who are dissatisfied with the current state of the country's economy are significantly more likely to want restriction across all three measures of restriction attitudes. Finding it difficult to cope on one's income also drives favour for restriction for all three types of immigrant groups.

**Table 4:** Individual level determinants of restriction preferences

	Restrict from same ethnicity		Restrict from different ethnicity		Restrict from poorer non European countries	
	dy/dx	se	dy/dx	se	dy/dx	se
Female	0.004	(0.007)	0.016	(0.009)	-0.004	(0.010)
Under 25 years old	-0.024*	(0.010)	-0.044**	(0.014)	-0.055**	(0.016)
26 to 39 years old	-0.009	(0.008)	-0.007	(0.011)	-0.010	(0.012)
Over 60 years old	-0.013	(0.011)	0.002	(0.016)	-0.001	(0.018)
ILO unemployed	-0.016	(0.014)	0.001	(0.023)	-0.019	(0.025)
In paid work	-0.013	(0.009)	-0.022	(0.012)	-0.006	(0.013)
Retired	-0.001	(0.013)	0.005	(0.018)	0.019	(0.021)
Supervisory duties	0.009	(0.007)	0.010	(0.009)	0.022*	(0.010)
Member of union	-0.016*	(0.007)	-0.023**	(0.009)	-0.014	(0.010)
Unlimited job contract	0.007	(0.007)	0.013	(0.009)	0.005	(0.010)
Less than lower secondary	0.044**	(0.010)	0.064**	(0.012)	0.062**	(0.013)
Tertiary education	-0.033**	(0.008)	-0.049***	(0.011)	-0.073**	(0.011)
>760 weekly house income	-0.026**	(0.009)	-0.046**	(0.012)	-0.058**	(0.013)
Managers and professionals	-0.007	(0.009)	-0.024*	(0.011)	-0.014	(0.013)
Elementary occupations	0.047**	(0.010)	0.054**	(0.012)	0.056**	(0.013)
Difficult to cope on income	0.017	(0.009)	0.033**	(0.012)	0.028*	(0.013)
Dissatisfied with economy	0.049**	(0.007)	0.066**	(0.009)	0.074**	(0.010)
Big city residence	-0.005	(0.013)	-0.025	(0.017)	-0.045*	(0.019)
Suburbs of big city	-0.001	(0.008)	0.011	(0.010)	0.016	(0.012)
Rural residence	-0.007	(0.007)	-0.003	(0.010)	0.015	(0.012)
Round 2	-0.004	(0.011)	-0.006	(0.013)	0.010	(0.017)
Round 3	0.023	(0.012)	0.007	(0.014)	0.051**	(0.017)
Round 4	0.007	(0.011)	-0.002	(0.013)	0.035*	(0.017)
Round 5	0.025*	(0.012)	0.008	(0.013)	0.061**	(0.017)
London	0.002	(0.015)	-0.020	(0.018)	0.003	(0.022)
Observations	6689		6703		6700	
ll_0	-2108.030		-2875.653		-3222.613	
ll	-1938.262		-2636.086		-2991.241	
r2_p	0.081		0.083		0.072	

Marginal effects and standard errors in parentheses; \*  $p < 0.05$ , \*\*  $p < 0.01$

All above variables are binary; Reference categories (0) are as follows: male; 40 to 59 years old; all other main economic activities; non supervisory duties; never been member of union; limited contract or no contract work; lower secondary, upper secondary or other; below 760 weekly household income; admin, skilled trades and personal services; living comfortably and coping of present income; satisfied with current state of economy (5 to 10); town or small village; round 1 of ESS.

### 8.2.2 Regional level determinants of restriction preferences

Table 5 reports the estimated average marginal effects and standard errors for the regional predictors on each of the restriction policy-related measures of attitudes.

The likelihood of a native respondent to prefer full restriction of ethnically similar immigrants is not found to be statistically linked to concentrations of white immigrants in the region, but it is rather found to increase by 0.1 percentage points for every point increase in the percentage of all immigrants within the respondent's occupational category. The estimated effect of the percentage of immigrants born in poorer European countries is also not found statistically significant on this dependent variable. The impact of the two regional indicators of white immigrants and immigrants from poorer European countries can be of particular interest in the case of the United Kingdom because the expansions of the EU after 2004 contributed to a sudden influx of immigrant workers from Eastern Europe and the Balkans in the UK labour market, thus adding the issue of intra-EU immigration to the debate over immigration restrictions. On the same issue, the dependent variable that refers to preferring restriction of immigration from poorer non-European countries posed an ambiguity problem. The initial question asks respondents about immigration from poorer countries outside Europe but does not clarify between the European Union and Europe as a continent. If respondents understood the question as referring to poorer countries outside the EU before the expansions, then their policy preference might reveal attitudes towards the new Eastern European worker inflow rather than immigrants from Africa, the Caribbean or Southeast Asia. We have no way of knowing for sure what the respondents had in mind but results could be seen as confirming this ambiguity. Table 5 shows that both variables for the percent of immigrants from within and outside Europe exert a statistically significant positive impact on the likelihood of a respondent to prefer restriction. Across all models, the percentages of Southeast Asian and black population are not found to exert a statistically significant effect. To the contrary, for every point increase in the percentage of non-white population in the respondent's major occupational category and within the region of residence, the propensity of the respondent to favour restriction of immigrants from a different ethnic or racial group from the majority of population is expected to be 0.3 percentage points lower. These findings could suggest that native respondents are more likely to support

immigration restriction of those from poorer countries regardless of whether they are European or not and irrespective of their ethnicity. Although ethnicity can be highly correlated with country of origin, results indicate that favouring restriction of immigration among native respondents is driven more by the state of the country the immigrants come from rather than their ethnic or racial group.

Additionally, in relation to the indicators of regional labour market conditions, again the percentages of unemployed natives and immigrants do not exert a statistically significant effect on the propensity to prefer restriction of ethnically similar or dissimilar immigrants. These estimated effects of unemployment contradict hypotheses made by labour market competition theories, since unemployment among natives would be expected to increase inter-group conflict due to both groups competing for fewer available jobs.

When it comes to the indicators of the regional skills context, Table 5 shows similar results as in the threat related measures of attitudes in the previous section. I find that for every point increase in the percentage of economically active natives with higher or tertiary education in the region, native respondents are expected to be on average 0.4 percentage points less likely to favour restriction of immigrants of a different ethnic or racial group from the majority of population and 0.9 percentage points less likely to want restriction of immigrants from poorer non European countries. Similarly, the probability of a respondent to prefer that no immigrants from the same or different ethnic group, or from poorer countries outside Europe should be allowed to come to the UK, is estimated between 0.5 and 1.3 percentage points lower for every increase in the percentage of natives who have no qualifications. Yet the opposite is found for regional concentrations of immigrants who have no qualifications. Table 5 shows that the likelihood of a respondent to favour restriction of ethnically different immigrants is estimated on average 0.4 percentage points higher for every point increase in the percentage of immigrants with no qualifications in the region.

**Table 5:** Regional level determinants of restriction preferences

	Restrict from same ethnicity		Restrict from different ethnicity		Restrict from poorer non European countries	
	(1)	(2)	(1)	(2)	(1)	(2)
<i>Population variables</i>						
% White immigrants	-0.001 (0.000)					
% Immigrants from poorer European countries		0.000 (0.001)			0.004** (0.001)	
% Immigrants from poorer non-European countries				0.000 (0.001)	0.003** (0.001)	
% Southeast Asian population			-0.009 (0.006)			-0.003 (0.005)
% Black population			0.013 (0.017)			0.008 (0.016)
<i>Labour market variables</i>						
% Immigrants by occupation		0.001* (0.001)				0.000 (0.001)
% Non white by occupation				-0.003* (0.001)		
% Unemployed natives	-0.004 (0.005)		0.008 (0.007)			
% Long-term unemployed natives		0.007 (0.008)		-0.002 (0.010)	-0.018 (0.013)	
% Unemployed immigrants	-0.001 (0.002)				0.002 (0.003)	0.002 (0.002)
Median pay	-0.000 (0.000)	-0.000* (0.000)				
<i>Skills variables</i>						
% Natives with high qualifications	-0.002 (0.002)		-0.004* (0.002)	-0.004* (0.002)		-0.009** (0.002)
% Natives with no qualifications		-0.005* (0.002)	-0.011** (0.004)	-0.008 (0.004)	-0.003 (0.004)	-0.013** (0.004)
% Immigrants with no qualifications			0.004* (0.001)	0.003 (0.001)		0.002 (0.001)
Observations	6689	6689	6703	6703	6700	6700
ll_0	-2108.0	-2108.0	-2875.7	-2875.7	-3222.6	-3222.6
ll	-1930.8	-1931.1	-2625.9	-2625.1	-2972.7	-2969.8
r2_p	0.084	0.084	0.087	0.087	0.078	0.078

Marginal effects; Clustered standard errors in parentheses; \*  $p < 0.05$ , \*\*  $p < 0.01$   
Model specifications include a full set of individual level controls as in Table 4

### 8.3 Sensitivity analysis

Sensitivity analysis is necessary in order to assess the robustness of the presented findings and address data limitation issues or possible sources of bias in the model specifications. This section therefore reviews different estimation approaches for testing the impact of the regional indicators as well as different ways of measuring anti-immigration attitudes.

As mentioned previously in the construction of the dependent variables, the choice of measurement and coding for the dependent variables is made with the intention of classifying individuals as expressing threat from immigration and preferring restriction, but since the initial question items are ten point scales, in one case and ordinal in the other, the cutoff point used might appear arbitrary or result in loss of information in the variation of attitudes of respondents. As a way to address this issue, I first estimate the models with both individual and regional level variables on the original question items. I use ordinary least squares regressions with clustered standard errors for the threat-related measures of attitudes and ordered logit regressions (also clustered by region and round) for the restriction-related attitudes. Results of estimations on the three scales which measure threat from immigration are shown in the appendix Table A.4, while results on the three ordinal variables of restriction preferences are shown in Table A.5. Differences in the estimated effects compared to the main analysis appear very small and in most cases, regional variables gain statistical significance. Those that lost statistical significance are the percentage of immigrants from poorer European countries and the variable of the percentage of immigrants in the respondent's occupational category.

A different approach in the examination of attitudes towards immigrants that is commonly used in the literature is factor and principal component analysis, which mean to find the optimal way to aggregate attitudes into fewer underlying components. This can be a very useful approach since it may be argued that differences across question items might be minimal if they are expressing an overall underlying attitude, as well as because it combines information into a more concise manner which facilitates the presentation of the results. This however, could potentially result in loss of information when the focus of the study is placed on distinguishing between perceptions over the economic and cultural impact of immigration, as well as accounting for attitudes towards specific

ethnic groups and origins, rather than an overall negative or positive reaction towards immigration. Nevertheless, for the purpose of assessing the possible impact of the choice to include the six variables separately, I conduct the analysis using two underlying factors of attitudes towards immigrants. Exploratory factor analysis indicated that two underlying factors explained up to 86 and 89 percent of the variation in the six variables of attitudes. One factor combines the three threat related attitudes whereas the second one combines the three variables that refer to restriction preferences. The appendix Tables A.6 and A.7 show the results of ordinary least squares regressions with clustered standard errors on the two factors. Most regional level variables in this case lose statistical significance, with the exception of the percentage of natives with high qualifications, median pay and the percentage of immigrants from poorer countries outside Europe. This confirms that combining individual attitudes into underlying components might result in loss of information, especially in terms of contextual influences which can have a less direct or smaller impact on attitudes compared to individual characteristics.

Finally, as a way to test whether different thresholds for the classification of a respondent's attitude as positive (0) or negative (0) in the respective variable has biased the results of this examination, I also conduct the analysis using alternative coding. I estimate the logit regressions using different cutoff points on the dependent variables. Results are shown in the appendix Tables A.8, A.9 and A.10 for the threat related measures of attitudes, and in Tables A.11, A.12 and A.13 for the restriction preferences related variables. In respect to the threat related dependent variables, individuals who evaluated immigration below 3 instead of 4 are classified as expressing threat. In this sense, the cutoff point requires a more extreme negative evaluation compared to the dependent variable used in the main analysis. I additionally recoded the restriction related variables to include *none* and *few* as 1 instead of only *none*, thus allowing for less extreme views on restriction compared to the main regressions. The results of clustered logit regressions using the different thresholds have few differences in terms of the effects of the regional indicators, although some cease to be statistically significant.

## 9 Discussion and conclusions

In this paper, I examine individual and regional characteristics as sources of anti-immigration attitudes of white native-born respondents in the United Kingdom using data from the five rounds of the European Social Survey between 2002 and 2010, alongside regional indicators of population composition, labour market and skills context computed from the Labour Force Survey. Attitudes towards immigrants are measured using six survey questions, three of them ask respondents to evaluate the impact of immigration on the economy, culture and quality of life in the country, whereas the other three refer to preferences for restricting immigration from different ethnic/race groups and origins.

Although further analysis is necessary in order to fully examine the causal relationship between regional conditions and individual immigration attitudes, this paper provides the first look into how job scarcity, average wages, skill supply and levels of immigrant population of different origins and ethnic groups, are associated with anti-immigrant sentiments of native respondents in the United Kingdom.

Overall, empirical findings suggest that while ethnic and racial distance still triggers negative reactions towards immigrants in the United Kingdom, education and contact between the two groups can assist in reducing both feelings of threat and support for restriction of immigration. Although the percentage of non-white immigrants in the region is associated with an increase in probability of evaluating immigration as harmful to the native culture, concentrations of non-white population in the respondents' major occupational category are statistically related with a decrease in the probability of expressing both feelings of threat to the economy and of favouring restriction of ethnically different immigrants. In contrast to previous research which has emphasised the impact of inter-group contact via social and casual interactions reflected in concentrations of immigrants in the neighbourhood, district or region, findings in this examination could indicate that inter-group contact via professional and employment-related interactions might also play a role in reducing negative reactions to immigration in the United Kingdom. Furthermore, and contrary to expectations, the regional unemployment rates for natives and immigrants are not statistically associated with a higher or lower probability of expressing concerns over the impact of immigration

or of preferring that no immigrants be allowed to come to the UK. Finally, the estimated effects on respondents' attitudes that are associated with the percentages of immigrants born in poorer European and non-European countries, as well as the percentages of black and Southeast Asian population, suggest that native respondents are more likely to support immigration restriction of those from poorer countries regardless of whether they are European or not and irrespective of ethnicity. Across all measures of attitudes, the percentage of native population in the region with either higher or tertiary education is associated with a decrease in the probability of expressing anti-immigration sentiments. A possible inference of the above findings in terms of immigration policy could be to direct efforts in improving the educational and employment prospects of both natives and immigrants in the attempt to improve inter-group relations, rather than assume that this will place the two groups in direct competition with each other.

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# A Appendix

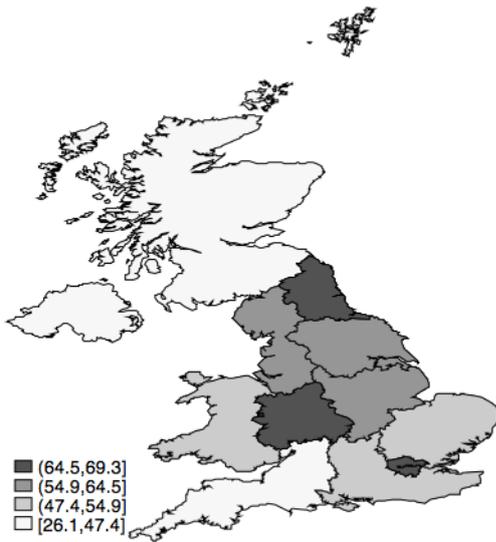
**Table A.1:** Summary of the six questions on attitudes towards immigrants

		Immigration is good or bad for economy	Immigration enriches or undermines culture	Immigration makes the country a better or worse place
Good/enriching/better	No.	94	192	129
	%	1.3%	2.6%	1.7%
9	No.	111	206	123
	%	1.5%	2.8%	1.6%
8	No.	499	704	408
	%	6.7%	9.5%	5.5%
7	No.	700	909	684
	%	9.4%	12.3%	9.2%
6	No.	723	749	704
	%	9.7%	10.1%	9.4%
5	No.	1,780	1,436	1,858
	%	24%	19.4%	24.9%
4	No.	835	859	953
	%	11.2%	11.6%	12.8%
3	No.	948	833	860
	%	12.8%	11.2%	11.5%
2	No.	754	651	741
	%	10.2%	8.8%	9.9%
1	No.	406	391	430
	%	5.5%	5.3%	5.8%
Bad/undermining/worse	No.	576	482	578
	%	7.8%	6.5%	7.7%
Total	No.	7,426	7,412	7,468
	%	100%	100%	100%

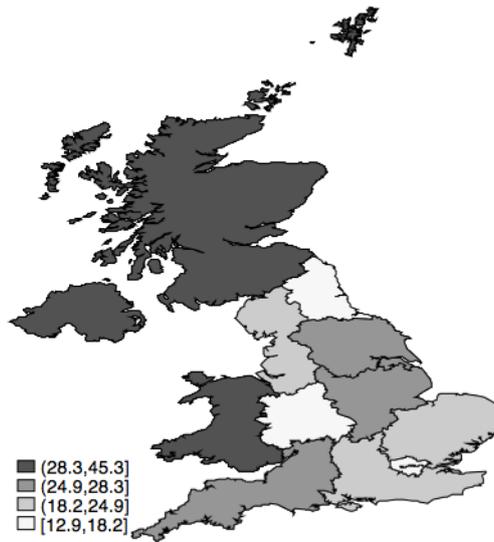
  

		Allow immigrants of same race/ethnic group as majority	Allow immigrants of different race/ethnic group from majority	Allow immigrants from poorer countries outside Europe
Allow many	No.	746	522	509
	%	10%	7%	6.8%
Allow some	No.	3,802	3,079	2,831
	%	50.8%	41.1%	37.9%
Allow a few	No.	2,219	2,689	2,792
	%	29.7%	35.9%	37.4%
Allow none	No.	713	1,195	1,343
	%	9.5%	16%	18%
Total	No.	7,480	7,485	7,475
	%	100%	100%	100%

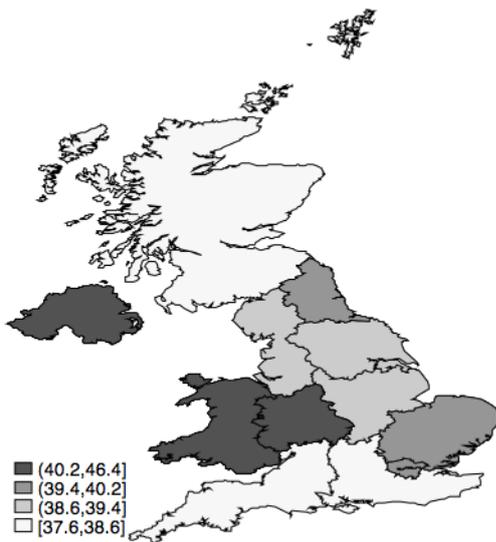
*Notes:* Table shows frequencies and percentages of original question items used for the construction of the binary dependent variables; The sample is taken from the five rounds of the ESS; Non-natives omitted



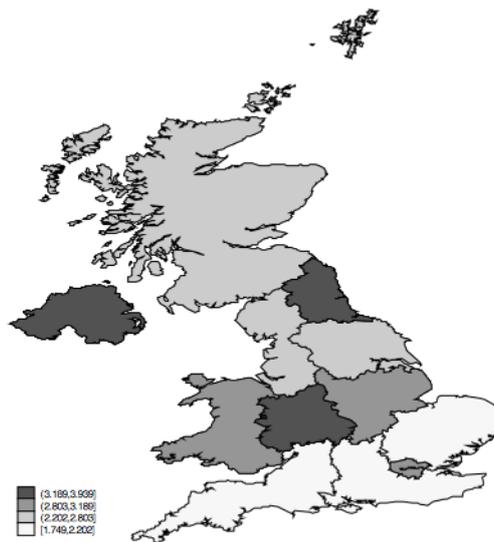
**Figure 5:** % Immigrants from poorer non-European countries, 2010



**Figure 6:** % Immigrants from poorer European countries, 2010



**Figure 7:** % Natives with no qualifications, 2010



**Figure 8:** % Long-term unemployed natives, 2010

**Table A.2:** Individual Level Controls - Descriptives

	Obs	Mean	Std. Dev.	Min	Max
Female	9640	0.55	0.50	0	1
Under 25 years old	9652	0.11	0.31	0	1
26 to 39 years old	9652	0.22	0.41	0	1
Over 60 years old	9652	0.34	0.47	0	1
ILO Unemployed	9651	0.03	0.18	0	1
In Paid Work	9651	0.51	0.50	0	1
Retired	9651	0.28	0.45	0	1
Supervisor Duties	9652	0.37	0.48	0	1
Member of Union	9616	0.45	0.50	0	1
Unlimited Job Contract	8441	0.70	0.46	0	1
Less than Lower Secondary	9599	0.29	0.45	0	1
Tertiary Education	9599	0.33	0.47	0	1
>£760 Weekly House Income	7891	0.17	0.37	0	1
Managers and Professionals	9231	0.36	0.48	0	1
Elementary Occupations	9231	0.30	0.46	0	1
Difficult to cope on present income	9563	0.17	0.37	0	1
Dissatisfied with the Economy	9392	0.52	0.50	0	1
Big City residence	9645	0.06	0.23	0	1
Suburbs of big city	9645	0.23	0.42	0	1
Rural residence	9617	0.25	0.43	0	1
Round 2	9651	0.17	0.38	0	1
Round 3	9651	0.22	0.41	0	1
Round 4	9651	0.21	0.41	0	1
Round 5	9651	0.21	0.41	0	1
London	9651	0.06	0.23	0	1

*Notes:* This table presents summary statistics for all individual level controls entered in the models. All above variables are binary; Reference categories (0) are as follows: male; 40 to 59 years old; all other main activities for past 7 days; non supervisory duties; never been member of union; limited contract or no contract work; lower secondary, upper secondary and other education; below 760 weekly household income; admin, skilled trades and personal services; living comfortably and coping of present income; satisfied with current state of economy (5 to 10); town or small village; round 1 of ESS.

**Table A.3:** LFS Regional Variables - Descriptives

Variable	Mean	Std. Dev.	Min.	Max.
% Immigrants	8.34	6.19	2.68	34.86
% White immigrants	54.79	13.65	29.3	87.98
% Non White Immigrants	45.21	13.65	12.01	70.7
% Immigrants from poorer European countries	17.33	5.99	1.86	45.38
% Immigrants from poorer non-European countries	56	9.85	17.85	75.29
% Southeast Asian population	3.28	2.66	0.22	11.13
% Black population	1.59	2.57	0	12.63
% Immigrants by occupation	9.33	8.13	0.73	60.91
% Non white by occupation	6.3	6.79	0	49.98
Median pay	330.53	45.32	250	500
% Unemployed immigrants	7.17	2.28	2.03	13.43
% Unemployed natives	5.62	1.55	3.15	9.66
% Long-term unemployed natives	1.45	0.8	0.27	3.94
% Immigrants with high qualifications	34.38	5.42	22.23	49.83
% Natives with high qualifications	30.46	5.33	23.02	52.66
% Immigrants with no qualifications	11.2	4.75	2.87	24.01
% Natives with no qualifications	9.29	2.41	5.05	19.03

*Notes:* The above table presents summary statistics for regional level computed variables

**Table A.4:** Threat from immigration - Scales

	Economic threat		Cultural threat		Overall threat	
	coef.	se	coef.	se	coef.	se
<i>Individual level variables</i>						
Female	0.402**	(0.051)	0.100	(0.054)	0.132*	(0.055)
Under 25 years old	0.138	(0.109)	-0.272*	(0.104)	-0.077	(0.105)
26 to 39 years old	0.186**	(0.062)	0.005	(0.081)	0.099	(0.068)
Over 60 years old	0.062	(0.105)	0.317*	(0.120)	0.115	(0.117)
ILO unemployed	-0.032	(0.176)	-0.322	(0.170)	-0.096	(0.180)
In paid work	0.176*	(0.076)	-0.064	(0.071)	-0.095	(0.085)
Retired	-0.025	(0.124)	-0.296*	(0.124)	-0.072	(0.133)
Supervisory duties	0.097	(0.058)	0.115	(0.073)	0.055	(0.041)
Member of union	-0.127**	(0.047)	-0.178**	(0.060)	-0.130*	(0.050)
Unlimited job contract	0.016	(0.069)	0.109	(0.059)	0.134*	(0.060)
Less than lower secondary	0.421**	(0.073)	0.373**	(0.080)	0.378**	(0.076)
Tertiary education	-0.599**	(0.092)	-0.828**	(0.082)	-0.698**	(0.083)
>£760 weekly house income	-0.335**	(0.081)	-0.257*	(0.102)	-0.249**	(0.086)
Managers and professionals	-0.335**	(0.074)	-0.329**	(0.084)	-0.430**	(0.064)
Elementary occupations	0.333**	(0.084)	0.447**	(0.093)	0.301**	(0.084)
Difficult to cope on income	0.364**	(0.084)	0.230*	(0.095)	0.337**	(0.095)
Dissatisfied with economy	1.026**	(0.070)	0.975**	(0.071)	1.043**	(0.065)
Big city residence	-0.348*	(0.136)	-0.567**	(0.146)	-0.468**	(0.136)
Suburbs of big city	0.159*	(0.072)	0.064	(0.080)	0.027	(0.068)
Rural residence	-0.017	(0.064)	-0.055	(0.078)	-0.022	(0.064)
Round 2	0.028	(0.094)	0.188	(0.121)	-0.070	(0.126)
Round 3	0.348*	(0.150)	0.832**	(0.181)	0.452*	(0.188)
Round 4	-0.050	(0.192)	0.458*	(0.192)	0.095	(0.211)
Round 5	0.089	(0.245)	0.384	(0.222)	0.174	(0.378)
London	-0.564	(0.633)	0.047	(1.097)	0.339	(0.372)
<i>Regional level variables</i>						
% Immigrants	0.069*	(0.030)				
% Immigrants from poorer European countries			0.004	(0.009)	0.005	(0.013)
% Immigrants from poorer non-European countries			0.009	(0.007)	0.014	(0.008)
% Southeast Asian population			0.041	(0.041)		
% Black population			0.072	(0.118)		
% Non white by occupation	-0.010	(0.015)	-0.031*	(0.013)	-0.008	(0.012)
% Unemployed natives	-0.006	(0.038)				
% Unemployed immigrants	0.016	(0.020)				
% Long-term unemployed natives					-0.159	(0.118)
Median pay	-0.006**	(0.002)	-0.004	(0.002)	-0.003	(0.002)
% Natives with high qualifications	-0.045**	(0.013)	-0.039*	(0.019)		
% Immigrants with no qualifications	-0.013	(0.008)	-0.026*	(0.012)	0.005	(0.014)
% Immigrants with high qualifications			0.001	(0.009)	-0.011	(0.010)
% Natives with no qualifications					-0.002	(0.034)
Observations	6683		6678		6707	
r2	0.146		0.148		0.158	

OLS coefficients; Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$

**Table A.5:** Restriction preferences - Ordinal

	Restrict from same ethnicity		Restrict from different ethnicity		Restrict from poorer non European countries	
	coef.	se	coef.	se	coef.	se
<i>Individual level variables</i>						
Female	-0.006	(0.004)	-0.006*	(0.003)	-0.001	(0.002)
Under 25 years old	0.024*	(0.010)	0.018**	(0.007)	0.025**	(0.006)
26 to 39 years old	0.001	(0.005)	0.001	(0.003)	0.001	(0.003)
Over 60 years old	0.004	(0.009)	-0.009	(0.005)	-0.010	(0.005)
ILO unemployed	0.007	(0.015)	0.007	(0.010)	0.012	(0.008)
In paid work	-0.003	(0.006)	0.000	(0.004)	-0.001	(0.003)
Retired	-0.002	(0.008)	-0.001	(0.005)	-0.004	(0.006)
Supervisory duties	-0.004	(0.004)	-0.001	(0.002)	-0.004	(0.002)
Member of union	0.014**	(0.004)	0.010**	(0.003)	0.007**	(0.003)
Unlimited job contract	-0.010*	(0.005)	-0.007*	(0.003)	-0.004	(0.003)
Less than lower secondary	-0.032**	(0.004)	-0.020**	(0.003)	-0.016**	(0.003)
Tertiary education	0.036**	(0.007)	0.032**	(0.006)	0.027**	(0.006)
760 weekly house income	0.020**	(0.005)	0.016**	(0.004)	0.019**	(0.004)
Managers and professionals	0.018**	(0.006)	0.013**	(0.004)	0.012**	(0.004)
Elementary occupations	-0.017**	(0.006)	-0.015**	(0.003)	-0.011**	(0.003)
Difficult to cope on income	-0.008	(0.005)	-0.007	(0.004)	-0.002	(0.004)
Dissatisfied with economy	-0.038**	(0.005)	-0.025**	(0.003)	-0.023**	(0.003)
Big city residence	0.019	(0.013)	0.021**	(0.007)	0.026**	(0.007)
Suburbs of big city	-0.003	(0.006)	-0.003	(0.004)	-0.003	(0.003)
Rural residence	-0.000	(0.005)	-0.002	(0.003)	-0.004	(0.003)
Round 2	-0.003	(0.008)	0.002	(0.005)	0.004	(0.005)
Round 3	-0.027**	(0.010)	-0.017**	(0.004)	-0.011	(0.006)
Round 4	-0.013	(0.013)	-0.007	(0.005)	-0.002	(0.007)
Round 5	-0.000	(0.021)	-0.014	(0.008)	-0.013	(0.010)
London	0.032	(0.025)	-0.027**	(0.009)	0.012	(0.008)
<i>Regional level variables</i>						
% Im. from poorer European countries	0.000	(0.001)			-0.001	(0.000)
% Im. from poorer non-European countries			-0.000	(0.000)	-0.001**	(0.000)
% Non white by occupation			0.001	(0.000)		
% Immigrants by occupation	-0.001	(0.001)				
% Unemployed immigrants					-0.000	(0.001)
% Long-term unemployed natives	-0.006	(0.006)	0.004	(0.004)	0.008	(0.004)
Median pay	0.000*	(0.000)				
% Natives with high qualifications			0.002**	(0.001)		
% Natives with no qualifications	0.004	(0.002)	0.003*	(0.001)	0.001	(0.001)
% Immigrants with no qualifications			-0.001	(0.001)		
Observations	6689		6703		6700	
ll_0	-7717.075		-8050.711		-8190.604	
ll	-7436.072		-7631.826		-7798.788	
r2_p	0.036		0.052		0.048	

Marginal effects; Standard errors in parentheses

Results of ordered logit regressions

\*  $p < 0.05$ , \*\*  $p < 0.01$

**Table A.6:** Threat from immigration - Factor component

	Threat from immigration factor					
	(1)		(2)		(3)	
<i>Individual level variables</i>						
Female	0.083**	(0.020)	0.082**	(0.020)	0.082**	(0.020)
Under 25 years old	-0.036	(0.040)	-0.037	(0.041)	-0.038	(0.040)
26 to 39 years old	0.036	(0.026)	0.034	(0.026)	0.036	(0.026)
Over 60 years old	0.073	(0.043)	0.078	(0.043)	0.074	(0.043)
ILO unemployed	-0.060	(0.064)	-0.063	(0.064)	-0.063	(0.065)
In paid work	-0.011	(0.028)	-0.009	(0.029)	-0.012	(0.029)
Retired	-0.058	(0.046)	-0.062	(0.047)	-0.060	(0.047)
Supervisory duties	0.036	(0.021)	0.038	(0.020)	0.037	(0.021)
Member of union	-0.056**	(0.019)	-0.060**	(0.019)	-0.060**	(0.019)
Unlimited job contract	0.042	(0.024)	0.042	(0.024)	0.042	(0.024)
Less than lower secondary	0.163**	(0.029)	0.163**	(0.029)	0.162**	(0.029)
Tertiary education	-0.304**	(0.034)	-0.301**	(0.033)	-0.302**	(0.034)
>£760 weekly house income	-0.118**	(0.035)	-0.115**	(0.035)	-0.114**	(0.034)
Managers and professionals	-0.162**	(0.029)	-0.162**	(0.028)	-0.159**	(0.029)
Elementary occupations	0.144**	(0.033)	0.147**	(0.031)	0.155**	(0.032)
Difficult to cope on income	0.133**	(0.037)	0.131**	(0.037)	0.131**	(0.037)
Dissatisfied with economy	0.430**	(0.027)	0.431**	(0.027)	0.431**	(0.027)
Big city residence	-0.207**	(0.053)	-0.197**	(0.054)	-0.206**	(0.054)
Suburbs of big city	0.024	(0.027)	0.029	(0.028)	0.022	(0.028)
Rural residence	-0.018	(0.027)	-0.016	(0.026)	-0.017	(0.027)
Round 2	-0.022	(0.049)	0.009	(0.050)	-0.007	(0.046)
Round 3	0.109	(0.057)	0.222**	(0.075)	0.194*	(0.080)
Round 4	-0.130	(0.067)	0.050	(0.080)	0.028	(0.091)
Round 5	-0.188	(0.111)	0.045	(0.094)	0.025	(0.153)
London	-0.384	(0.225)	0.241	(0.172)	-0.198	(0.405)
<i>Regional level variables</i>						
% Population non-white immigrants	0.017	(0.014)				
% Im. from poorer European countries			0.002	(0.004)	0.003	(0.004)
% Im. from poorer non-European countries			0.006*	(0.003)	0.005	(0.003)
% Southeast Asian population					0.003	(0.017)
% Black population					0.036	(0.048)
% Immigrants by occupation	-0.003	(0.004)				
% Non white by occupation			-0.005	(0.005)	-0.008	(0.005)
% Unemployed natives	0.034	(0.031)				
% Long-term unemployed natives	-0.035	(0.063)			-0.037	(0.044)
Median pay			-0.001	(0.001)	-0.002*	(0.001)
% Immigrants with high qualifications	-0.007	(0.004)	-0.002	(0.004)	-0.003	(0.004)
% Natives with no qualifications	-0.007	(0.011)			-0.005	(0.013)
% Natives with high qualifications			-0.016*	(0.007)		
% Immigrants with no qualifications			-0.005	(0.004)		
Observations	6563		6563		6563	
r2	0.180		0.182		0.181	

OLS coefficients; Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$

**Table A.7:** Restriction preferences - Factor component

	Restriction preferences factor					
	(1)		(2)		(3)	
<i>Individual level variables</i>						
Female	0.043	(0.022)	0.045*	(0.021)	0.042	(0.022)
Under 25 years old	-0.176**	(0.044)	-0.172**	(0.045)	-0.179**	(0.044)
26 to 39 years old	-0.013	(0.027)	-0.015	(0.027)	-0.014	(0.027)
Over 60 years old	0.073	(0.048)	0.073	(0.047)	0.073	(0.048)
ILO unemployed	-0.076	(0.067)	-0.085	(0.066)	-0.080	(0.066)
In paid work	0.010	(0.030)	0.005	(0.030)	0.005	(0.030)
Retired	0.020	(0.048)	0.017	(0.047)	0.016	(0.048)
Supervisory duties	0.023	(0.022)	0.024	(0.022)	0.024	(0.022)
Member of union	-0.085**	(0.025)	-0.079**	(0.024)	-0.084**	(0.025)
Unlimited job contract	0.055*	(0.024)	0.054*	(0.023)	0.052*	(0.023)
Less than lower secondary	0.208**	(0.031)	0.211**	(0.031)	0.212**	(0.031)
Tertiary education	-0.257**	(0.041)	-0.249**	(0.041)	-0.251**	(0.041)
>£760 weekly house income	-0.145**	(0.030)	-0.147**	(0.030)	-0.146**	(0.030)
Managers and professionals	-0.122**	(0.032)	-0.109**	(0.031)	-0.107**	(0.031)
Elementary occupations	0.112**	(0.034)	0.136**	(0.029)	0.139**	(0.034)
Difficult to cope on income	0.051	(0.034)	0.053	(0.034)	0.050	(0.034)
Dissatisfied with economy	0.237**	(0.028)	0.237**	(0.028)	0.236**	(0.028)
Big city residence	-0.166**	(0.046)	-0.159**	(0.045)	-0.161**	(0.044)
Suburbs of big city	0.029	(0.035)	0.022	(0.035)	0.021	(0.034)
Rural residence	0.014	(0.029)	0.021	(0.029)	0.021	(0.029)
Round 2	-0.001	(0.053)	-0.005	(0.048)	-0.049	(0.044)
Round 3	0.185*	(0.071)	0.163**	(0.054)	0.089	(0.065)
Round 4	0.102	(0.089)	0.048	(0.069)	-0.013	(0.065)
Round 5	0.111	(0.129)	0.097	(0.108)	0.010	(0.112)
London	-0.051	(0.115)	0.090	(0.466)	-0.095	(0.105)
<i>Regional level variables</i>						
% Im. from poorer European countries	-0.002	(0.004)			0.007	(0.004)
% Im. from poorer non-European countries					0.008**	(0.003)
% Southeast Asian population			0.005	(0.015)		
% Black population			0.009	(0.044)		
% Immigrants by occupation	0.005	(0.004)				
% Non white by occupation					-0.003	(0.004)
% Unemployed natives			-0.002	(0.021)		
% Unemployed immigrants					0.002	(0.009)
% Long-term unemployed natives	-0.011	(0.037)			-0.031	(0.041)
Median pay	-0.002*	(0.001)				
% Natives with no qualifications	-0.021	(0.012)	-0.033**	(0.012)	-0.005	(0.011)
% Natives with high qualifications			-0.022**	(0.005)		
% Immigrants with no qualifications			0.004	(0.004)		
Observations	6643		6643		6643	
r2	0.125		0.131		0.128	

OLS coefficients; Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$

**Table A.8:** Economic Threat - Different threshold

	Model (1)		Model (2)	
	dy/dx	se	dy/dx	se
<i>Individual level variables</i>				
Female	0.052**	(0.011)	0.052**	(0.011)
Under 25 years old	0.018	(0.025)	0.015	(0.025)
26 to 39 years old	0.042**	(0.015)	0.042**	(0.015)
Over 60 years old	0.011	(0.023)	0.010	(0.022)
ILO unemployed	-0.004	(0.034)	-0.002	(0.033)
In paid work	0.036*	(0.017)	0.035*	(0.017)
Retired	-0.001	(0.024)	-0.001	(0.024)
Supervisory duties	0.013	(0.014)	0.013	(0.014)
Member of union	-0.023*	(0.012)	-0.023	(0.012)
Unlimited job contract	0.003	(0.015)	0.002	(0.015)
Less than lower secondary	0.068**	(0.016)	0.070**	(0.016)
Tertiary education	-0.101**	(0.020)	-0.103**	(0.020)
>£760 weekly house income	-0.025	(0.021)	-0.025	(0.021)
Managers and professionals	-0.067**	(0.016)	-0.068**	(0.017)
Elementary occupations	0.064**	(0.017)	0.058**	(0.018)
Difficult to cope on income	0.072**	(0.017)	0.073**	(0.016)
Dissatisfied with economy	0.198**	(0.012)	0.198**	(0.013)
Big city residence	-0.036	(0.033)	-0.037	(0.033)
Suburbs of big city	0.031	(0.017)	0.029	(0.016)
Rural residence	-0.001	(0.017)	0.001	(0.017)
Round 2	0.065**	(0.024)	0.019	(0.021)
Round 3	0.122**	(0.035)	0.020	(0.030)
Round 4	0.051	(0.048)	-0.080*	(0.036)
Round 5	0.074	(0.059)	-0.087	(0.053)
London	-0.197*	(0.090)	-0.207**	(0.070)
<i>Regional level variables</i>				
% Immigrants	0.023**	(0.007)		
% Population non-white immigrants			0.013*	(0.006)
% Non white by occupation	-0.003	(0.003)		
% Immigrants by occupation			-0.001	(0.002)
% Unemployed natives	-0.001	(0.009)	0.009	(0.014)
% Unemployed immigrants	0.001	(0.005)		
% Long-term unemployed natives			-0.007	(0.027)
Median pay	-0.002**	(0.001)		
% Natives with high qualifications	-0.008	(0.004)		
% Immigrants with no qualifications	-0.003	(0.002)		
% Immigrants with high qualifications			-0.003*	(0.002)
% Natives with no qualifications			-0.004	(0.006)
Observations	6753		6753	
ll_0	-4416.499		-4416.499	
ll	-4078.165		-4082.248	
r2_p	0.077		0.076	

Alternative coding of dependent variable: 0 to 3 as 1 and 4 to 10 as 0

Marginal effects; Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$

**Table A.9:** Cultural Threat - Different threshold

	Model (1)		Model (2)	
	coef	se	coef	se
<i>Individual level variables</i>				
Female	-0.004	(0.013)	-0.005	(0.013)
Under 25 years old	-0.054**	(0.019)	-0.054**	(0.019)
26 to 39 years old	-0.001	(0.014)	-0.001	(0.014)
Over 60 years old	0.036	(0.026)	0.034	(0.026)
ILO unemployed	-0.012	(0.031)	-0.010	(0.032)
In paid work	-0.006	(0.014)	-0.006	(0.014)
Retired	-0.042	(0.028)	-0.041	(0.028)
Supervisory duties	0.019	(0.015)	0.020	(0.015)
Member of union	-0.015	(0.011)	-0.017	(0.011)
Unlimited job contract	0.017	(0.012)	0.018	(0.012)
Less than lower secondary	0.051**	(0.017)	0.052**	(0.017)
Tertiary education	-0.109**	(0.013)	-0.108**	(0.013)
>£760 weekly house income	-0.023	(0.019)	-0.022	(0.019)
Managers and professionals	-0.047**	(0.014)	-0.048**	(0.014)
Elementary occupations	0.065**	(0.018)	0.063**	(0.017)
Difficult to cope on income	0.045**	(0.015)	0.045**	(0.016)
Dissatisfied with economy	0.165**	(0.013)	0.165**	(0.013)
Big city residence	-0.078*	(0.030)	-0.081**	(0.031)
Suburbs of big city	0.021	(0.014)	0.020	(0.014)
Rural residence	-0.006	(0.013)	-0.008	(0.013)
Round 2	0.068**	(0.024)	0.079**	(0.025)
Round 3	0.145**	(0.037)	0.163**	(0.039)
Round 4	0.087*	(0.041)	0.128**	(0.044)
Round 5	0.067	(0.056)	0.107*	(0.052)
London	0.060	(0.104)	-0.054	(0.174)
<i>Regional level variables</i>				
% Im. from poorer European countries	-0.000	(0.002)	-0.000	(0.002)
% Im. from poorer non-European countries	0.002	(0.001)	0.002	(0.002)
% Southeast Asian population			0.002	(0.008)
% Black population			0.014	(0.021)
% Non white by occupation	-0.003	(0.003)	-0.003	(0.002)
Median pay			-0.001	(0.000)
% Natives with high qualifications	-0.006	(0.004)	-0.002	(0.004)
% Natives with no qualifications	-0.006	(0.005)		
% Immigrants with high qualifications			-0.003	(0.002)
% Immigrants with no qualifications			-0.005*	(0.002)
Observations	6753		6753	
ll_0	-4189.998		-4189.998	
ll	-3883.274		-3879.306	
r2_p	0.073		0.074	

Alternative coding of dependent variable: 0 to 3 as 1 and 4 to 10 as 0

Marginal effects; Standard errors in parentheses;

\*  $p < 0.05$ , \*\*  $p < 0.01$

**Table A.10: Overall Threat - Different threshold**

	Model (1)		Model (2)	
	coef	se	coef	se
<i>Individual level variables</i>				
Female	0.011	(0.013)	0.010	(0.013)
Under 25 years old	-0.031	(0.022)	-0.033	(0.022)
26 to 39 years old	0.032*	(0.013)	0.031*	(0.013)
Over 60 years old	0.013	(0.024)	0.013	(0.024)
ILO unemployed	0.006	(0.037)	0.005	(0.038)
In paid work	-0.023	(0.018)	-0.023	(0.018)
Retired	0.007	(0.028)	0.006	(0.028)
Supervisory duties	0.005	(0.010)	0.006	(0.010)
Member of union	-0.015	(0.013)	-0.016	(0.012)
Unlimited job contract	0.019	(0.014)	0.018	(0.014)
Less than lower secondary	0.074**	(0.016)	0.075**	(0.016)
Tertiary education	-0.110**	(0.017)	-0.109**	(0.017)
>£760 weekly house income	-0.010	(0.019)	-0.010	(0.019)
Managers and professionals	-0.080**	(0.014)	-0.080**	(0.014)
Elementary occupations	0.051**	(0.015)	0.050**	(0.015)
Difficult to cope on income	0.075**	(0.020)	0.075**	(0.020)
Dissatisfied with economy	0.195**	(0.012)	0.195**	(0.012)
Big city residence	-0.091**	(0.031)	-0.089**	(0.032)
Suburbs of big city	0.006	(0.015)	0.005	(0.014)
Rural residence	-0.002	(0.016)	-0.003	(0.016)
Round 2	0.024	(0.031)	0.016	(0.028)
Round 3	0.130**	(0.039)	0.120**	(0.046)
Round 4	0.063	(0.043)	0.065	(0.047)
Round 5	0.089	(0.070)	0.104	(0.081)
London	-0.106	(0.215)	-0.017	(0.253)
<i>Regional level variables</i>				
% Im. from poorer European countries			0.001	(0.002)
% Im. from poorer non-European countries			0.003	(0.002)
% Southeast Asian population	0.010	(0.009)	-0.006	(0.010)
% Black population	0.016	(0.029)	0.012	(0.029)
% Long-term unemployed natives	-0.036	(0.023)	-0.033	(0.024)
Median pay	-0.001**	(0.000)	-0.001*	(0.000)
% Natives with no qualifications	-0.008	(0.007)	-0.001	(0.006)
% Immigrants with no qualifications	0.000	(0.003)		
% Immigrants with high qualifications			-0.003	(0.002)
Observations	6753		6753	
ll_0	-4351.071		-4351.071	
ll	-3972.986		-3968.466	
r2_p	0.087		0.088	

Alternative coding of dependent variable: 0 to 3 as 1 and 4 to 10 as 0

Marginal effects; Standard errors in parentheses;

\*  $p < 0.05$ , \*\*  $p < 0.01$

**Table A.11:** Restriction of Same Race/Ethnic Group - Different threshold

	Model (1)		Model (2)	
	dy/dx	se	dy/dx	se
<i>Individual level variables</i>				
Female	0.005	(0.014)	0.005	(0.014)
Under 25 years old	-0.019	(0.022)	-0.018	(0.022)
26 to 39 years old	0.015	(0.018)	0.015	(0.018)
Over 60 years old	-0.008	(0.029)	-0.009	(0.029)
ILO unemployed	-0.010	(0.039)	-0.009	(0.039)
In paid work	0.006	(0.019)	0.008	(0.019)
Retired	0.001	(0.028)	0.003	(0.028)
Supervisory duties	0.022	(0.013)	0.022	(0.013)
Member of union	-0.036**	(0.012)	-0.036**	(0.012)
Unlimited job contract	0.022	(0.014)	0.023	(0.014)
Less than lower secondary	0.091**	(0.016)	0.091**	(0.016)
Tertiary education	-0.093**	(0.019)	-0.095**	(0.019)
>£760 weekly house income	-0.057**	(0.016)	-0.057**	(0.016)
Managers and professionals	-0.050**	(0.018)	-0.052**	(0.018)
Elementary occupations	0.048*	(0.019)	0.043*	(0.022)
Difficult to cope on income	0.026	(0.018)	0.027	(0.018)
Dissatisfied with economy	0.106**	(0.013)	0.105**	(0.013)
Big city residence	-0.024	(0.030)	-0.025	(0.029)
Suburbs of big city	0.013	(0.017)	0.015	(0.018)
Rural residence	0.008	(0.015)	0.007	(0.016)
Round 2	0.020	(0.026)	0.026	(0.024)
Round 3	0.127**	(0.026)	0.106**	(0.035)
Round 4	0.082*	(0.037)	0.044	(0.040)
Round 5	0.102*	(0.048)	0.005	(0.060)
London	0.022	(0.078)	-0.054	(0.074)
<i>Regional level variables</i>				
% White immigrants	-0.002	(0.001)		
% Im. from poorer European countries			0.000	(0.002)
% Immigrants by occupation			0.002	(0.002)
% Long-term unemployed natives			0.015	(0.019)
% Unemployed natives	-0.006	(0.009)		
% Unemployed immigrants	-0.004	(0.005)		
Median pay	-0.000	(0.000)	-0.001	(0.000)
% Natives with high qualifications	-0.002	(0.003)		
% Natives with no qualifications			-0.011	(0.005)
Observations	6689		6689	
ll_0	-4465.694		-4465.694	
ll	-4262.228		-4263.510	
r2_p	0.046		0.045	

Alternative coding of dependent variable: *none* and *few* as 1, *some* and *many* as 0

Marginal effects; Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$

**Table A.12:** Restriction of Different Race/Ethnic Group - Different threshold

	Model (1)		Model (2)	
	dy/dx	se	dy/dx	se
<i>Individual level variables</i>				
Female	0.020	(0.015)	0.020	(0.015)
Under 25 years old	-0.049	(0.027)	-0.050	(0.027)
26 to 39 years old	0.003	(0.020)	0.003	(0.020)
Over 60 years old	0.056*	(0.027)	0.056*	(0.027)
ILO unemployed	-0.042	(0.044)	-0.042	(0.044)
In paid work	0.002	(0.021)	0.002	(0.021)
Retired	-0.016	(0.030)	-0.017	(0.030)
Supervisory duties	0.012	(0.013)	0.013	(0.013)
Member of union	-0.044**	(0.013)	-0.045**	(0.014)
Unlimited job contract	0.025*	(0.012)	0.025	(0.013)
Less than lower secondary	0.082**	(0.021)	0.082**	(0.021)
Tertiary education	-0.141**	(0.023)	-0.141**	(0.023)
>£760 weekly house income	-0.067**	(0.019)	-0.066**	(0.019)
Managers and professionals	-0.065**	(0.018)	-0.064**	(0.018)
Elementary occupations	0.047**	(0.017)	0.049**	(0.018)
Difficult to cope on income	0.023	(0.018)	0.023	(0.018)
Dissatisfied with economy	0.101**	(0.017)	0.101**	(0.017)
Big city residence	-0.075*	(0.029)	-0.074*	(0.029)
Suburbs of big city	0.013	(0.020)	0.012	(0.020)
Rural residence	0.018	(0.016)	0.016	(0.016)
Round 2	-0.003	(0.021)	-0.002	(0.020)
Round 3	0.100**	(0.023)	0.107**	(0.022)
Round 4	0.035	(0.032)	0.044	(0.024)
Round 5	0.055	(0.049)	0.082	(0.047)
London	0.108	(0.206)	0.110	(0.070)
<i>Regional level variables</i>				
% Im. from poorer non-European countries			0.001	(0.001)
% Southeast Asian population	0.012	(0.007)		
% Black population	-0.010	(0.020)		
% Unemployed natives	-0.008	(0.010)		
% Non white by occupation			-0.001	(0.002)
% Long-term unemployed natives			-0.022	(0.019)
% Natives with high qualifications	-0.011**	(0.002)	-0.011**	(0.002)
% Natives with no qualifications	-0.011	(0.006)	-0.012	(0.007)
% Immigrants with no qualifications	-0.000	(0.002)	0.003	(0.002)
Observations	6703		6703	
ll_0	-4644.846		-4644.846	
ll	-4347.459		-4348.159	
r2_p	0.064		0.064	

Alternative coding of dependent variable: *none* and *few* as 1, *some* and *many* as 0

Marginal effects; Standard errors in parentheses;

\*  $p < 0.05$ , \*\*  $p < 0.01$

**Table A.13:** Restriction from Poorer non European Countries - Different threshold

	Model (1)		Model (2)	
	dy/dx	se	dy/dx	se
<i>Individual level variables</i>				
Female	0.010	(0.013)	0.011	(0.013)
Under 25 years old	-0.085**	(0.022)	-0.080**	(0.023)
26 to 39 years old	0.005	(0.017)	0.004	(0.017)
Over 60 years old	0.079*	(0.031)	0.080*	(0.031)
ILO unemployed	-0.044	(0.035)	-0.045	(0.036)
In paid work	0.011	(0.019)	0.011	(0.019)
Retired	0.003	(0.035)	0.004	(0.035)
Supervisory duties	0.020	(0.014)	0.020	(0.014)
Member of union	-0.035*	(0.014)	-0.032*	(0.014)
Unlimited job contract	0.018	(0.015)	0.018	(0.014)
Less than lower secondary	0.070**	(0.022)	0.070**	(0.022)
Tertiary education	-0.115**	(0.022)	-0.112**	(0.022)
>£760 weekly house income	-0.082**	(0.020)	-0.083**	(0.020)
Managers and professionals	-0.076**	(0.017)	-0.072**	(0.018)
Elementary occupations	0.031	(0.016)	0.040*	(0.018)
Difficult to cope on income	-0.005	(0.020)	-0.004	(0.019)
Dissatisfied with economy	0.102**	(0.015)	0.102**	(0.015)
Big city residence	-0.094**	(0.029)	-0.091**	(0.030)
Suburbs of big city	0.017	(0.022)	0.020	(0.022)
Rural residence	0.012	(0.016)	0.012	(0.016)
Round 2	-0.014	(0.026)	0.005	(0.024)
Round 3	0.076*	(0.033)	0.104**	(0.028)
Round 4	0.025	(0.038)	0.040	(0.033)
Round 5	0.090	(0.061)	0.079*	(0.040)
London	-0.059	(0.037)	-0.072	(0.221)
<i>Regional level variables</i>				
% Im. from poorer European countries	0.003	(0.002)		
% Im. from poorer non-European countries	0.004**	(0.001)		
% Southeast Asian population			0.003	(0.008)
% Black population			0.023	(0.022)
% Immigrants by occupation			-0.001	(0.002)
% Long-term unemployed natives	-0.049*	(0.022)		
% Unemployed immigrants	-0.002	(0.005)	-0.007	(0.005)
% Natives with high qualifications			-0.014**	(0.003)
% Natives with no qualifications	-0.001	(0.006)	-0.016**	(0.006)
% Immigrants with no qualifications			-0.002	(0.003)
Observations	6700		6700	
ll_0	-4604.457		-4604.457	
ll	-4322.221		-4313.586	
r2_p	0.061		0.063	

Alternative coding of dependent variable: *none* and *few* as 1, *some* and *many* as 0

Marginal effects; Standard errors in parentheses;

\*  $p < 0.05$ , \*\*  $p < 0.01$