**Spaces of Harassment: A Multilevel Analysis of the Role of Community Ethnic Composition, Segregation and Social Disorganisation Among Ethnic Minorities in Britain**

William Shankley

University of Manchester

Corresponding Author: Tel: +447894555840 Email: william.shankley@manchester.ac.uk

&

James Laurence[[1]](#footnote-2)

University of Manchester/Das Wissenschaftzentrum Berlin fur Sozialforschung

Email: James.laurence@manchester.ac.uk

Abstract

This paper examines the community-level drivers of ethnic minorities' experiences of harassment in Britain, particularly the role of community ethnic structure (ethnic composition, ethnic segregation and ethnic-change), socio-economic disadvantage, and residential stability. Drawing on an ethnic minority-booster sample of a large-scale UK panel dataset, we address several potential shortcomings with prior analyses to make novel contributions, including taking a multilevel approach, using self-reported harassment data and not police statistics, testing across multiple geographic-scales, and measuring both actual harassment experiences and fear of future harassment. Key findings suggest minorities in areas with a higher share of Whites report a higher likelihood of harassment and that living in more residentially segregated areas increases minorities’ likelihoods of harassment. We also find strong evidence that socio-economic disadvantage and residential instability foster harassment. We find that these same community-level drivers are also significant for minorities’ fear of harassment; in part, because experiences of harassment affect the victim’s fear of future harassment, but also because harassment experiences spill over to impact fear among a victim’s close social contacts. These findings have important implications for the theorising of harassment and support the inclusion of community-level measures in national policy to reduce harassment.

Keywords: Ethnic Minorities, Fear of Harassment, Harassment, Multilevel Models, Segregation

1. Introduction

As Britain continues to become more ethnically diverse, ethnic groups are increasingly encountering one another in their everyday lives. While many studies focus on the opportunities such diversity brings for positive intergroup-encounters, increasing ethnic diversity also brings opportunities for more negative interethnic-encounters; for example, experiences of racism (Nandi et al. 2016; Benier 2019). Focusing on minorities’ negative intergroup encounters is crucial, given they are not only traumatic experiences, but they also have well-established and long-lasting effects on minorities’ physical (Karlsen and Nazroo, 2002) and mental health (Nandi et al., 2016). Questions around minorities’ experiences of racism have become increasingly salient in the UK in recent years, especially given the political context of Brexit, with some evidence (e.g., Home Office statistics) indicating ethnic hate crime has increased every year since 2013 (Shankley and Rhodes, 2020; *although see* Nandi and Luthra, 2021). These trends are not the sole preserve of the UK, with similar rises in hate crimes across Europe (Shankley and Rhodes, 2020).

A significant body of research explores the drivers of such race-hate crime. Among other things, this work demonstrates the critical role of space and the characteristics of communities in structuring racially-motivated attacks. This is not only because localities are sites where ethnic difference is commonly encountered (affecting opportunities for hate crime), but also given the role space plays in shaping processes of intergroup-relations more broadly, and how these affect hate crime (Bernier, 2019). Such work has been critical for understanding the factors driving racially-motivated harm. However, several issues within the current literature may limit our understanding of the role space plays in minorities’ race-hate crime victimisation, or interpersonal racism more broadly.

Firstly, current research primarily draws on police-reported hate crime statistics. Such data may be biased, given they rely on statistics compiled through the validation of hate crime by police (Gerstenfeld, 2017). This can affect what encounters are recorded as hate crimes (often narrowing experiences to the most acute, physical experiences), alongside being conditional on whether victims come forward to report experiences. Secondly, most hate crime research takes an ecological approach, exploring associations between aggregate hate crime rates in an area and their area-level predictors, limiting studies’ inferences that it is processes occurring within communities themselves that matter (contextual-effects) alongside the characteristics of the individuals within these areas (compositional-effects). Thirdly, most hate crime research focuses on the US context. There remains limited empirical evidence to substantiate if community-drivers operate the same way across different contexts (Lyons, 2007; Kasara, 2013). For example, in the US, where segregation is much higher and more entrenched, its presence might make group-differences especially salient, triggering greater anxiety and threat towards out-groups. Alternatively, processes of racialisation in the US, in particular, stemming from the history of slavery, could lead to greater hostility where majority-group members see their communities undergoing ethnic change. Finally, there is significant heterogeneity in the geographic-scale of analysis applied to measure the ‘community’ across current hate crime studies, e.g. from census tracts up to metropolitan areas and US States. Potentially, applying different geographic-scales may drive heterogeneity in findings across studies (*as per* the modifiable areal unit problem) while precluding a fuller understanding of the scale at which those spatial-processes affecting hate crime are most salient.

This paper aims to address these potential limitations to deepen our understanding of the spatial drivers of minorities’ interpersonal experiences of prejudice. Firstly, we aim to examine a broader range of interpersonal experiences of ethnically motivated harm, through the use of self-reported experiences of what we will term ‘inter-ethnic harassment,’ defined as “ethnically or racially motivated verbal or physical abuse” (Nandi et al., 2016: 333). These are captured using self-reported measures of ethnic minorities’ experiences, which encapsulate a broader spectrum of minority-group experiences, including less-acute encounters such as racial slurs. Secondly, data on individuals’ self-reported experiences of harassment are drawn from a nationally-representative sample, with an ethnic minority booster, of individuals in Britain. By matching respondents to data on their communities, we apply multilevel approaches to more robustly test the posited contextual-effects driving harassment. Thirdly, by exploring these relationships in the UK, we can examine how generalisable drivers of harassment are outside of the US. Finally, we intend to model relationships across three different geographic-scales: from neighbourhoods up to the broader (sub-)city areas to address the modifiable areal unit problem, while exploring at what scale spatial-processes are most salient for harassment.

Alongside these aims, this paper will address a related but underexplored dimension of harassment: the spatial drivers of minorities’ fear of harassment, such as feeling unsafe or avoiding places because of one’s ethnicity. Little work has explored this, but it remains critical to understand, given that fear of harassment alongside actual experiences can also engender long-term harm to health (Lorenc et al., 2012). We thus aim to explore the spatial drivers of actual harassment experiences *and* fear of harassment, whether similar characteristics structure both, and how far experiences of the former impact the latter. In particular, the extent to which actual experiences of inter-ethnic harassment might spill-over to impact the fear of harassment of minorities who have not directly experienced harassment themselves.

1. Theoretical Framework

2.1. Importance of communities in harassment

Extant work on hate crime finds consistent evidence that “hate crimes cluster in particular neighbourhoods” (Bernier, 2019:159). This finding alone suggests that the characteristics of place are likely contextually-relevant to harassment, not least because they are sites whereby people encounter ethnic difference. Moreover, researchers have long posited that processes shaped by the characteristics of communities (e.g., ethnic group size) can also shape interethnic-relations in discrete ways, with critical implications for experiences of harassment (Blalock, 1967). In the following section, we review the extant evidence on the spatial drivers of race hate crime.

2.1.1. Community Ethnic Composition and Hate Crime

The size of the ethnic minority group in an area is posited as a critical driver of hate crime, not least because it structures opportunities for interethnic-encounters. However, the evidence as to the direction of the effect is mixed. Some studies show increasing hate crime in areas with a higher percentage whites or fewer ethnic-minorities (e.g., Lyons 2007); some show increasing frequency with a greater minority-share (e.g., Benier 2019); while other work shows no relationship among specific-groups (e.g., among Black and Latino groups; see Hipp et al. 2009).

Studies demonstrating that higher minority-share increases hate crime largely draw on the perceived threat literature. Quillian (1996: 820) outlines that as the size of the out-group increases the dominant-group perceive certain rights are under "threat by members of the subordinate group". Here, the majority-group perceive specific-resources belong to them, and as the size of the minority-group grows, these resources are threatened (LeVine and Campbell, 1972). Several studies find more hate crime in communities with a higher proportion of minorities, attributing this to majority-group perceived-threat (e.g., Benier, 2019).

Nevertheless, other work shows that higher minority-share in an area is related to lower hate crime. Piatkowska et al. (2018), for example, find that as the size of the black population in US counties increases, hate crime decreases. They draw on the power-differential variant argument: that as the minority-share of a neighbourhood increases, members of the majority-population become more fearful of acting on their prejudice, reducing hate crime (Piatkowska et al. 2018). Such findings fall under broader theories of the ‘defended neighbourhood’ hypothesis, where ethnic minorities trigger perceptions of racial-threat among majority-groups, but that threat is higher where minority populations are smaller (Lyons, 2008). Here, hate crime is predicted to decrease where minority-shares are higher as “the hostility that greeted the first significant group of newcomers gives way to acceptance or indifference, and those prone to violence lose that active encouragement or passive acceptance of the community” (Green et al., 2001:490). This idea finds resonance with related mental health work suggesting that higher co-ethnic density protects members against harassment (Bécares et al., 2009).

2.1.2 Community Ethnic Change and Hate Crime

Alongside minority-group size, studies also suggest the *magnitude of recent ethnic change* also matters for hate crime. Lyons (2008: 259), for example, finds that hate crime occurs more frequently "in communities where recent population transition threatens longstanding racial homogeneity." Two theories are used to explain why ethnic change affects hate crime and prejudice. The ‘Defended Neighbourhood’ hypothesis, as Lyons (2008) outlines, suggests that hate crime is motivated by cultural competition, where the dominant-population sees minorities symbolically challenging the neighbourhood's identity and such threat can be triggered by greater recent-changes in ethnic composition. This suggests that hate crime increases in these transitioning-neighbourhoods as rising feelings of cultural threat are combined with "the[…]perception[…]that attacks against them [minorities] may go…unpunished", given ethnic minorities "may be perceived as 'easy targets' by the more prejudiced,” with limited power to resist such attacks (Lyons, 2008: 360). Hate crime is thus believed to be a form of social control to limit such change. This theory finds resonance with studies on anti-immigrant sentiment, where the amount of recent change in immigration is a potent driver of hostility towards immigrants, while minority-group size tends to predict more positive-sentiments (Acculturating-contexts theory) (Newman, 2013). Such findings have been replicated in hate crime work, where the amount of recent change in immigration in US States predicts more hate crime while US States with a higher immigrant-share see less (Stacey et al., 2011).

2.1.3 Community Ethnic Segregation and Hate Crime

Hate crime research largely focuses on the role of the *size* of groups in an area. However, such approaches omit a potentially key factor: the effects of how ethnic groups are *distributed* across an area, i.e. levels of residential segregation. The *size* of groups in an area and their *relative distribution* across it capture distinct and complementary features of a community's 'ethnic structure' with potentially important implications for intergroup relations (Laurence et al., 2019). In particular, studies note that measures of ethnic-group size alone give little indication of how those groups are distributed across an area, and two communities with equally sized majority/minority populations could be either highly segregated or integrated (Laurence et al., 2019). Studies of intergroup relations demonstrate that segregation needs to be considered *alongside* ethnic group size, given it could also shape intergroup attitudes (Enos and Celaya, 2018; Laurence et al,. 2019). However, how segregation affects intergroup attitudes and thus how it might affect harassment remains debated.

Experimental studies show segregation may harden perceptions of group differences, where space becomes a heuristic for strength of group-difference (Enos and Celaya, 2018). Here, when ethnic minorities are more segregated from the majority-group, majority-members view them as increasingly different, heightening the saliency of group-boundaries and triggering greater out-group bias (Enos and Celaya, 2018). Similarly, Laurence et al. (2019) suggest that segregation (not simply diversity) may drive prejudice across communities via affecting opportunities for positive-contact. If segregation thus triggers greater prejudice this could lead to harassment. Conversely, however, work shows segregation could reduce prejudice; for example, Kunovich and Hodson (2002) find in Bosnia that segregated areas are associated with lower prejudice, suggesting that the isolation of groups from one another limits perceptions of group-threat. This finding is in line with the often-controversial idea posited that 'good fences make good neighbours', whereby segregation can reduce inter-ethnic conflict (Caspersen, 2004).

Little work explicitly investigates the role of segregation in race-hate crimes. Kim et al (2016) and Piatkowska et al. (2020) found that higher segregation predicted lower hate crime after adjusting for the size of minority groups. Lynch et al. (2008) observed that US cities with higher segregation exhibited more hate crime. Whereas Legewie and Schaeffer (2016) found that it is not segregation or integration that matter for intergroup tensions; instead, tensions appear greatest where boundaries between neighbourhoods are fuzzy (Contested Boundaries Theory); in areas where there are no boundaries, or the boundaries are well-defined, tensions are lower and thus harassment may be less likely to occur. Thus, while segregation could play a key role in structuring harassment, there remains a paucity of research testing its role.

2.1.3. Community Disadvantage, Residential Instability, and Hate Crime

Alongside community ethnic-structure, non-ethnicity related characteristics may also affect hate crime, particularly socio-economic disadvantage and residential instability. Studies primarily draw on the Social Disorganization Theory: that low socio-economic status, ethnic heterogeneity, and residential instability prevent communities from collectively acting to solve problems, leading to increasing criminality, of which hate crime forms one part (Shaw and McKay, 1942). Within this view, residential instability “produces a constantly changing population, and this constant change undermines stable neighborhood organisations and other informal social controls” (Gladfelter et al., 2017:58). Similarly, economic disadvantage may undermine local cohesion, reducing residents’ willingness to engage in informal control to reduce crime (Benier et al., 2016). Socio-economic disadvantage may also trigger hate crime through affecting perceptions of resource competition, e.g. the Group Threat Theory (Berniers et al., 2016). Therefore, harassment may occur more in places with perceived resource-competition (Lyons, 2007; Berniers et al., 2016).

Hate crime studies find relatively mixed evidence for the role of contextual socio-economic disadvantage on hate crime, with disadvantage associated with more hate crime (Benier, 2019), less hate crime (Mills, 2020), or no association (Lyons, 2008; Ellonen et al., 2020). In addition, Lyons (2007) finds that disadvantage may affect hate crime likelihoods among majority-/minority-groups in different ways: while anti-black hate crimes may occur in organised/relatively affluent communities, anti-white hate crimes may occur in disadvantaged neighbourhoods. Similarly, mixed findings have emerged for residential instability, with studies suggesting it triggers more hate crime (Grattet, 2009), less (Mills, 2020), or plays only a marginal part (Benier et al., 2016).

* + 1. Current Study

2.1.4.1 Potential Limitations within current hate crime research

Taken together, studies show that evidence for the effect of some community-level drivers on hate crime remains mixed (e.g., minority-group size) and for others scarce (e.g., segregation). However, there are potential issues among current studies that both limit our understanding of what drives minority victimisation but which also precludes a fuller understanding of how harassment affects the lives of minorities: namely, the spatial-drivers of fear of harassment.

The first issue relates to the accuracy of current measures of hate crime experiences, given the reliance on police-reported statistics, which may be biased. The key reason is that they often rely on local trust between the police and minorities, where victims feel more/less confident in reporting hate crimes (Liska and Chamlin, 1984). Such police-distrust has a long history in the US, leading to underreporting. A second limitation of police-reported hate crimes is whether they pick up the broad spectrum of ethnically-motivated negative interpersonal encounters that minorities experience, from racial slurs to physical assault. As official hate crime statistics rely on the formal acknowledgement of a crime occurring, it may omit less-acute negative encounters, where minorities do not think it is worth reporting. This paper addresses this limitation by drawing on self-reports of “ethnically or racially motivated verbal or physical abuse,” beyond hate crimes alone, through the use of self-reported experiences of ‘inter-ethnic harassment’ (Nandi et al., 2016: 333).

The second issue is that studies predominantly take an ecological approach to testing theories that context matters for hate crime, examining how an area’s characteristics is associated with the aggregate police-recorded hate crime therein (Grattet, 2009; Lyons, 2008). However, such approaches make accurately identifying posited contextual-level processes affecting hate crime difficult, given the possibility that ecological findings are a product of compositional differences between areas. Differences between individuals (for example, their age, income) also affect likelihoods of victimisation (Ellonen et al., 2020). Accordingly, contextual-effects observed in ecological studies could be driven solely by the composition of minorities in an area. Therefore, this paper takes a multilevel approach, matching minority individuals’ self-reports of harassment (alongside individual-level controls) to the characteristics of their communities.

The third issue relates to variability in the geographical-scale at which studies have tested the effects of spatial characteristics on hate crime (from census tracts up to Metropolitan areas/US States) (Stacey et al., 2011; Piatkowska et al., 2020). This makes inter-study comparisons difficult, given the same characteristics could potentially operate differently at different scales, i.e. the modifiable areal unit problem. Studies on intergroup attitudes more broadly suggest the scale at which the ‘community’ is captured shapes our understanding of contextual-processes, where effects indeed differ across geographic-scale (Pottie-Sherman and Wilkes, 2017). If contextual-processes of intergroup-attitudes structure harassment experiences, then the geographic-scale selected may affect spatial-predictors of harassment. Accordingly, we examine the role of space across three scales (from neighbourhoods up to (sub-)city-level) to examine whether the saliency of scale differs.

Finally, the majority of hate crime research has been conducted in the US. However, given historic patterns of racial discrimination, alongside high-segregation, it remains unclear how far spatial predictors of hate crime will operate the same across contexts (Benier et al., 2016). Accordingly, further research is needed to examine if the same community mechanisms operate for minorities in other contexts. The few non-US studies highlight the relative inconsistency of contextual-effects to US models (e.g., Benier et al., 2016). To address this, we study Great Britain.

2.1.4.2 Understanding the spatial drivers of fear of harassment

There is currently little research into the spatial drivers of minority-groups’ *fear* of harassment (Wickes et al., 2017). However, understanding spatial patterns of fear of harassment is critical to produce a fuller understanding of how space impacts minorities’ lives, given fear of hate crime has similar pernicious outcomes as actual harassment e.g., detrimental effects on mental health (Lorenc et al., 2012). Existing British policy, such as the current Anti-Social Behaviour, Crime and Policing Act 2014, also acknowledges the connection between crime and fear of future experiences of hate crime: "[h]ate crime creates fear and can have a devastating impact on individuals and communities. Individual incidents can send reverberations through communities, just as they can reinforce established patterns of prejudice" (Home Office, 2021). To date, few studies examine the role of space in minorities’ fear of harassment (although studies have looked at the individual-level drivers of such fear, e.g., Chongatera, 2013). However, several strands of research lead us to expect that space likely plays a key role in fear of harassment.

Firstly, research on the community-level drivers of ethnic minorities' fear of crime in general finds that as area minority-share increases, so does their fear of crime (Eitle and Tayler, 2008). In explaining this, they draw on processes of perceived group-threat outlined previously, suggesting that as an area’s minority-share increases, methods of majority-group social control intensify (Liska and Chamlin, 1984), resulting in minorities fear of crime in general increasing. If processes of threat drive minorities’ fear of crime, then those characteristics of communities posited to impact actual harassment could affect fear of harassment in the same way.

Secondly, research shows a well-established link between people's previous victimisation and current fear of crime (Wickes et al., 2017); thus, actual experiences of harassment may, in turn, impact fear of future harassment. The link is shown for hate crime in particular, with hate crime victims exhibiting higher fear of future hate crime (Chongatera, 2013). Community characteristics could therefore play a key role in structuring fear of harassment if they also structure patterns of actual harassment experiences, and such victims of harassment, in turn, report a greater fear of harassment. However, Nandi et al. (2016) posit that one's fear of harassment not only stems from one's own experiences of harassment but the harassment of one’s close social contacts and community e.g., family members, household members, neighbours. Hence, even minorities with no direct experience of harassment may see their fear increase through the experiences of people in their social networks i.e. actual harassment can spill over to affect others’ fear (Nandi et al., 2016). Indeed, such spill-overs often lie at the heart of hate crime motivations, to intimidate both the victim and members of the victim's community (Cogan, 2002).

There are therefore valid reasons for believing space may structure patterns of both actual harassment and fear of harassment and that similar characteristics likely affect both. This paper will explore how space affects *both* actual harassment and minorities’ fear of harassment. We will also examine how far the impact of spatial characteristics on actual harassment account for any impact of spatial characteristics on fear of harassment. This will include direct-effects, where one’s own experiences of harassment affects one’s fear of harassment, and also indirect-effects, by exploring how far actual experiences of harassment among people’s close social contacts affect their own fear of harassment, even if they have no direct harassment-experience themselves. In the present study, our data allow us to test this by exploring how experiences of harassment of an individual’s household members might spill-over to affect their own fear of harassment.

Hypotheses

Based on our review of the literature, we develop the following hypotheses to test the community-level drivers of harassment/fear of harassment, accounting for the (at times) opposing predictions for how communities are expected to matter for harassment.

*Regarding community ethnic composition:*

H1a. Group-threat theories suggest individuals in communities with larger shares of minorities are likely to experience more harassment.

H1b. Defended Neighbourhood theories suggest individuals in communities with smaller shares of minorities are likely to experience more harassment.

*Regarding community ethnic change:*

H2. Defended Neighbourhood theories/Acculturating-Context theories suggest individuals in communities that have recently undergone a larger change in the share of minority members are likely to experience more harassment.

*Regarding community segregation:*

H3a. Opportunity-structures/’Good Fences’ theories suggest individuals living in more segregated areas are less likely to experience harassment.

H3b. ‘Segregation as driver of prejudice’ theories suggest individuals living in more segregated areas are more likely to experience harassment.

*Regarding community disadvantage and residential (in)stability:*

H4. Theories of disadvantage and residential instability suggest that minorities living in more disadvantaged/residentially unstable communities are more likely to experience harassment.

*Regarding the community-level drivers of fear of harassment:*

H5. We predict that the same community-level drivers of harassment will also lead minorities to be more likely to report fear of harassment. This increase may be both directly, via individuals’ own higher likelihood of actually experiencing harassment, and indirectly, via individuals being aware of actual experiences of harassment occurring among their close social contacts – in this case, members of their households - even when they have no direct experience of harassment themselves.

1. METHODS

3.1 Sample

Data on individuals are drawn from the UK Household Longitudinal Study (UKHLS), a nationally representative dataset comprising approximately 26,000 UK households, with an Ethnic Minority Boost Sample (EMBS) including 4,000 households. The EMBS draws respondents from high ethnic minority concentration areas in the UK where over 80 per cent of the UK’s main ethnic minority groups live (Nandi et al., 2016). Our paper uses data from the adult (16+) interviews and harassment module at waves 3, 5, 7 and 9 (2011-2019), including Britain’s main ethnic groups (Asian, black, Mixed, Other and Chinese).

Given response rates vary between waves, weights adjust for differences between panels (Nandi et al., 2016). Preliminary testing revealed minor differences among individuals with missing data. Applying listwise deletion, our final analytic sample size is n=17046 for actual harassment and n=16847 for fear of harassment. Restricting the sample to non-white respondents who were asked the harassment module and had available weighting data provides n=19336 respondents, resulting in 2290 and 2489 respondents dropped due to missing data (largely from missing data on national identification) (Table 1). We focus on England, Scotland and Wales, excluding Northern Ireland given potentially different dynamics of harassment (particularly religious harassment) among the White majority group.

[Table 1]

3.2 Geographical units

Data on respondents’ residential communities are drawn from the 2011 UK Census. As outlined, one issue with hate crime studies is heterogeneity in the geographic-scale at which ‘communities’ are captured. As research on community-levels drivers and harassment is in its infancy in Britain, we test effects across three different levels: Lower-Layer Super Output Areas (an average of 1,500 residents/650 households), Middle-layer Super Output Area (an average of 7,200 households), and Local Authorities (LAs). LAs are geographically larger and form political boundaries, as they are designated as local government areas and not defined by population density/size. The hierarchical design of census geography is designed to improve reporting of small area statistics using consistent population size (for example, LSOA population size remains relatively stable between a minimum 1,000 and maximum 1,500) and allow aggregation from smaller units (LSOA-level) through to larger units (e.g., MSOA-level) (ONS, 2011). We will examine which geographic-scale processes linking community characteristics and harassment are most salient through testing across these levels. The final sample includes 3365 LSOAs, 2055 MSOAs, 332 LAs.

3.3 Outcome Measures: actual harassment and fear of harassment

Individuals’ self-reported experiences of harassment were drawn from the UKHLS harassment module. Respondents were first asked: ‘The next few questions are about how *safe* you feel in different places. In the last 12 months, have you felt unsafe in any of the places listed on the card? If so, which ones?’ e.g. ‘on public transport’. Respondents were then asked why they felt unsafe at these locations: ‘Did you feel unsafe for any of the reasons listed on this card? If so, which ones?’, e.g., ‘ethnicity’, etc. These questions were then repeated for whether a respondent had: ‘avoided’ any of those same locations and the reason they gave as to why; whether they had been ‘insulted, called names, threatened or shouted at’ at those locations and why; and whether they had been ‘physically attacked’ at those locations and why. We take a similar approach to Nandi et al. (2016) by differentiating ‘actual’ harassment (people reporting being ‘insulted’ or ‘attacked’ in the past twelve months) from ‘fear of’ harassment (people reporting feeling ‘unsafe’ or who ‘avoided certain places’ during the past twelve months). We categorised ethnic harassment as responses where a respondent cited it was because of their ‘ethnicity’, ‘religion’ or ‘nationality’. We did not code ethnic minorities experience of harassment based on ‘dress or appearance’, ‘language or accent’, ‘sex’, ‘age’ or ‘sexual orientation’ because we felt their greater ambiguity fell outside the definition of ethnic harassment. In contrast to Nandi et al. (2016), we did not differentiate between harassment occurring in public-spaces (e.g., public buildings) from private-spaces (e.g., home), given difficulties in distinguishing from respondent’s answers whether harassment occurred in public or private places. Therefore, we operationalised harassment and fear of harassment occurring across all places (however, we re-ran models using the public/private distinction and found substantively similar results; see Appendix, Tables 1a, 1b and 1c).

We calculated count-variables for the number of reports of ‘actual’ ethnic harassment (insults and attacks) that an individual experienced at different locations. Similarly, we generated a count-variable for the number of reports of fear of ethnic harassment (avoided, or felt unsafe in, places) that an individual experienced at different locations. We also ran all analyses using binary-variables of ‘experienced ethnic harassment or not’, returning substantively identical results (*see below*).

3.4 Community-level Independent Variables

We explore patterns of harassment among all ethnic minority individuals as a single group. Therefore, to capture the ethnic composition of an area, we apply percent non-white in a community, and assume when testing the harassment experiences among minorities that the perpetrator is likely to be white (*see* limitations). To calculate the amount of ethnic-change occurring in the community, we measure the size of the percentage-change in the non-White population between 2001-2011 censuses.

We are also concerned with how majority-/minority-groups are distributed across an area (segregation) affects harassment. While different segregation measures exist, we are interested in how (un)evenly groups are distributed across an area, applying the Index and Dissimilarity (ID), which is a commonly used segregation measure, tapping the (un)evenness dimension of segregation (Massey and Denton, 1988). We use the index for two groups: Whites versus non-Whites, in a particular area.

Diagram, schematic

Description automatically generated

bi = the population of non-white British in the *i*th area, that is, the “lesser area”; B = the total population of non-white British in the “greater area”; wi = the population of white British in the ith area, that is, the “lesser area”; W= the total population of white British in the “greater area.”

The ID ranges from 0 (perfectly integrated) to 100 (perfectly segregated). We can interpret this as the proportion of the out-group who would need to move between lesser-areas to create an even distribution across the greater-area. When testing saliency of geographic area (measuring the "greater area" at the LSOA-, MSOA- and LA-level), we hold the "lesser area" constant at the Output Area-level (average 300 people).

We also test the influence of community socio-economic disadvantage derived from a factor analysis of three variables, including percentage of all economically-active people over the age of 16 who are unemployed, the percentage of households comprised of female lone-parents, and the percentage of households' socially renting. Residential stability is captured with a measure of the proportion of people in an area who reported being resident there one-year previously. High values indicate areas are more stable. We ran correlations between community-level variables to test for multi-collinearity[[2]](#footnote-3). Appendix (Table 2) shows that the correlations are at an acceptable level to assume multicollinearity is unlikely to bias our models.

3.5 Individual/community-level covariates

We adjust for multiple individual-level covariates, including age, gender, religion, economic status, ethnicity, housing tenure, education-level, UK-born, and national identity. At the community-level, we adjusted for urban-rural classification of an area and the percentage of people aged 65 and over, given they frequently feature in the crime literature. These variables are all captured at LSOA, MSOA and LA levels (although urban-rural classification is only available at the LSOA-/MSOA-levels; accordingly, for the LA-level analysis, we use MSOA-level). Finally, we test the 2015 IMD crime domain for England as a robustness check (Appendix Table 3).

3.6 Modelling and Analytical Approach

Our modelling approach begins with pooling all the available data from Waves 3, 5, 7, 9 of the UKHLS, linked to 2011 Census data. Given that our outcomes are over-dispersed count data, we apply negative binomial regression. To correct standard errors for clustering we apply random-intercept multilevel models.[[3]](#footnote-4). Weights adjust for non-response and ensure the samples are representative.

Our analytic approach is divided into two sections. The first stage involves testing the community-level drivers of *actual experiences of harassment* among non-white respondents to gain an overview of how community-level drivers affect minorities’ actual harassment. To explore geographic-scale salience, we test these relationships at the LSOA-, MSOA- and LA-levels.

The second stage involves testing whether these community-level drivers also predict patterns of *fear of harassment*. Furthermore, we aim to examine how far any observed community-level drivers of fear of harassment may be accounted for by experiences of actual harassment. This includes how a respondent’s own experiences of harassment affect their fear of harassment (direct-effect), and also how knowing someone who has experienced harassment affects a respondent’s fear of harassment, even when they have not experienced it themselves (indirect-effect). To test for such spill-over effects, we presume that an individual’s fear of harassment could also be shaped by the actual harassment experiences of *other people in their household* (for which we have data given the UKHLS is a household study). Therefore, we generate an additional actual-harassment measure comprised of four categories: 0 (the baseline) is if someone has not experienced actual harassment themselves and they do not live in a household with anyone who has experienced actual harassment; 1 if someone has not experienced any harassment, *but* theylive in a household with someone who has experienced actual harassment; 2 if someone has themselves experienced actual harassment but lives in a household with someone who has not experienced actual harassment, and 3 is if someone has themselves experienced actual harassment and lives in a household with someone who has experienced actual harassment as well. This can identify how far one’s own experiences of actual harassment, and those of one’s household, explain any community-level drivers of fear of harassment. Lastly, we also aim to strengthen the evidence that communities do matter for harassment via a variety of robustness checks (e.g., aiming to address selection effects).

4. Results

4.1 The community-level drivers of *actual* harassment

We firstly explore the associations between our community-level predictors and respondents’ reported number of actual experiences of harassment (Table 2). This includes our measures of community ethnic-structure: ethnic composition (percentage non-white, ranging from 0 to 100 per cent), segregation (white/non-white Index of Dissimilarity,ranging from 0 to 100), and magnitude of recent ethnic change (change in percent non-White from 2001-2011). We also test resource disadvantage (index) and residential stability (percentage present one-year before, ranging 0 to 100). We repeat the tests across the three geographic-scales (LSOA, MSOA and LA scales)

[Table 2 about here]

Table 1 demonstrates that non-white individuals residing in areas with a higher percentage of non-white residents report fewer experiences of harassment, with associations present across all geographic-scales and becoming stronger at larger levels of aggregation. Simultaneously, even adjusting for ethnic composition, residential segregation in an area independently predicts harassment (at the LSOA- and MSOA-levels): minorities living in areas of higher segregation report more harassment. The amount of recent change has no significant association with actual harassment[[4]](#footnote-5). Resource-disadvantage is positively associated with harassment, although weakly significant at the LSOA-level but significant at the p<.05 level at the MSOA-level, although non-significant at the LA-level. Individuals in areas with higher residential stability also report less harassment (at LSOA-/MSOA-levels).

To summarise saliency of geographic-scales for the community ethnic-structure effects, Figure 1 plots the coefficients for our three-key ethnic-structure variables across different area-levels. For percentage non-White, the effects become stronger at higher-levels of aggregation. However, for segregation, we observe a bell-curve relationship with weaker effects at the LSOA-level (significant) and LA-level (non-significant) but the strongest effects at the MSOA-level. Consistent effects emerge for disadvantage and residential stability at the LSOA-, and especially MSOA-, levels. We therefore find more statistically significant associations at the LSOA- and especially MSOA-level, suggesting more localised spatial-scales matter more for processes of harassment. We also tend to find somewhat stronger-effects at the MSOA-level. However, as Figure 1 demonstrates, the significant overlapping confidence intervals between LSOA-/MSOA-level models suggest these differences are not significant.

[Figure 1]

4.2 The community-level drivers of *fear of* harassment and mediating role of *actual* harassment

We posit the same community characteristics predicting actual harassment might also shape minorities’ fear of harassment. Table 3 examines the relationship between our key community-level variables and frequencies of fear of harassment to test this idea. Models 1, 3 and 5 (Table 3) examine the overall association of our key community-level predictors and fear of harassment at the LSOA-, MSOA- and LA-level, respectively. We generally observe similar findings as those reported for actual harassment. Minorities are more likely to report fear of harassment in areas with a smaller share of non-whites, higher segregation, and higher resource disadvantage. In addition, a larger recent increase in the percent non-white also predicts more fear of harassment (at least at the MSOA-level). However, residential stability has no association with fear of harassment. We once more plot the coefficients for our community ethnic structure measures on fear of harassment across geographic-scales (Figure 2). The percentage of non-white in an area again appears most salient at larger geographical scales. Nevertheless, LSOA- and MSOA-levels reveal more consistent effects for segregation, ethnic change, and disadvantage.

Having established that several of the same community-level characteristics predicting actual harassment appear important for fear of harassment, we explore a possible explanation. One reason is that actual experiences of harassment may generate greater fear of harassment, both by increasing fear among victims of harassment but also for close social contacts of the victim who did not experience harassment themselves. To test this, Models 2, 4 and 6 (Table 3) add in our categorical measure of actual experiences of harassment, which captures whether: an individual personally experienced harassment and lives in a household where members also did; whether an individual personally experienced harassment but members of their household did not; whether they did not experience harassment but live in a household with someone who did; or, whether they have no direct or indirect experiences of harassment (omitted baseline). Firstly, personal experiences of harassment are the strongest predictors of fear of harassment. However, individuals who have no personal experience but have a household member who has experienced harassment also report greater fear. Secondly, on adding in actual experiences of harassment, the effect of most predictors of fear of harassment is substantially reduced (although often remaining significant). These results suggest that both direct and indirect experiences of actual harassment contribute to individuals’ fear of harassment, and a significant portion of the community-level patterns of fear of harassment may come through how communities affect direct and indirect actual harassment experiences.

[Table 3]

[Figure 2]

4.3 Robustness, Sensitivity and Heterogeneous-effects

We conducted additional analyses to investigate the robustness/sensitivity of our findings, alongside potential drivers of heterogeneity in effects. Firstly, we test whether the relationships observed represent contextual-effects or endogenous-processes (Lynch 2008), e.g., whether segregation does increase the likelihood of harassment or whether harassment experiences motivate minority-groups into more segregated spaces. When harassment or fear of harassment at *t0* is controlled for while predicting harassment at *t2* (Appendix Table 5), the effect size and significance for all the community-level predictors decreases (sometimes to non-significance, as in the case of percentage change for actual harassment). These findings suggest that some endogeneity may drive part of the association between community-level measures and actual/fear of harassment. However, even under these more robust modelling specifications, disadvantage, segregation and (to a lesser extent) ethnic composition of communities continue to predict harassment, suggesting contextual-effects are also likely at work.

Secondly, we tested whether constituency-level far/further right-wing electoral support also drives harassment/fear of harassment (Nandi and Luthra, 2021). We tested a measure of BNP support in 2010 (when the BNP scored their highest share that subsequently waned by 2015) and UKIP support in 2015. Table 6 (Appendix) suggests that, both UKIP and BNP vote, predict higher likelihoods of actual harassment, while BNP vote also predicts minorities’ fear of harassment. Adding these measures reduced the effect size and (in some cases) significance-level of our community-level variables. However, such measures may be mediating the effects of our community-level variables on harassment via acting as a proxy for negative out-group attitudes, which we posit are what link community ethnic-structure to harassment experiences. Therefore, we excluded these variables from our main models.

Thirdly, we further explored the role of community-level segregation in light of the ‘Contested Boundaries Theory’ (Legewie and Schaeffer 2016), which suggests it is not integration or segregation that matter, but where ‘boundaries’ between groups are ‘fuzzy’. Data limitations prevent a full replication of this theory. However, we tested whether segregation exerted a quadratic-effect on harassment (with the assumption that harassment should be highest at medium segregation, where boundaries are likely to be more fuzzy). However, Table 7 (Appendix) shows no evidence of non-linearity.

Fourthly, we tested the validity of our approach of measuring ethnic harassment that sums experiences of ethnic, religious and nationality harassment into a single variable. To explore this, we disaggregated this variable and tested how our community-level drivers were associated with each composite type of harassment: religion, nationality, or ethnicity. We performed this for actual (Appendix Figure 1) and fear of harassment (Appendix Figure 2). These results suggest that overall, community-level variable effect sizes are broadly similar for each type of harassment (although the lower n of each separate type of harassment leads to non-significance for some). Thus, there is little significant difference in the community-level predictors of different reasons given for harassment; although, community-level segregation appears more strongly related to religious and national harassment than around ethnicity (although these differences are non-significant).

We also tested whether there were any differences between community-level drivers of less severe forms of harassment (insulted) compared to more severe forms of harassment (attacked), at LSOA-, MSOA- and LA-level (Appendix Figure 3). The results show that our community-level drivers tend to exert similar effects on minorities likelihood of being ‘insulted’ or ‘attacked’ (accounting for the lower frequency of being attacked in the data, and thus larger confidence intervals). In sum, the two concepts likely share the same underlying mechanism. Interestingly, resource disadvantage tends to have a larger effect on likelihood of being attacked, over insulted; however, the difference is non-significant. We also tested the robustness of our harassment variables by running our models using a binary measure of both actual and fear of harassment. Tables 8a and 8b (Appendix) show the findings remain similar.

Finally, we explore the implications of research on ‘perceived discrimination’ showing ethnic discrimination is a greater concern for more educated immigrants (Steinmann, 2019) and those who identify strongly with their own ethnic group (Simonsen, 2016; Tuppat and Gerhards, 2020). We tested whether our community-level variables exerted heterogeneous-effects on harassment/fear of harassment across different education groups and by strength of individual’s ethnic identity (‘how important is your ethnic background to who you are’: 4-option Likert scale from ‘very important’ to ‘not important at all’). We also included random slopes for the individual-level variables in cross-level interactions (Heisig and Schaeffer, 2019). However, Tables 9a and 9b (Appendix) show no significant interaction-terms between community-level drivers and education/identity.

1. Discussion

This study aimed to examine the spatial drivers of interethnic harassment in Britain. It also aimed to address shortcomings within current studies of hate crime, including: using self-reported experiences rather than police-reported statistics; taking a multilevel approach to more robustly test for contextual-effects; exploring the saliency of geographic-scale for harassment patterns; and exploring how/why communities influence fear of harassment alongside actual victimisation experiences.

Our findings demonstrate that, as observed in hate crime studies, the ethnic-structure of communities is a key predictor of interethnic harassment. The results lend greater support to predictions collected under the 'Defended Neighbourhoods’ theory. Contrary to the Racial Threat theory (where a higher minority-share should trigger more harassment), ethnic minority individuals living in areas with a higher proportion of the majority-group are *more* likely to report harassment and fear of harassment. We also find fear of harassment higher where communities have experienced a larger recent increase in the size of the minority-group and some evidence that actual experiences are higher under conditions of larger recent change (Appendix Table 5). In sum, minorities experience a broader array of harassment experiences (beyond more acute forms of hate crime) and greater fear of harassment, where the minority-share is smaller and where a greater amount of change has occurred more recently, closely in line with ‘Defended Neighbourhood’ theories.

We also observe that, alongside ethnic composition/change, segregation is a key predictor of harassment. Here, minorities living in more segregated areas report more actual harassment and more fear. Given segregation is modelled alongside ethnic composition, how groups are distributed across an area also plays a key role in harassment experiences, alongside group size. This finding corresponds to theories suggesting group-threat stems from segregation, alongside minority-group size, and shows the benefits of testing both composition and segregation together, given they exert independent effects on patterns of harassment. Therefore, far from ‘good fences’ being a way of minimising conflict, they instead appear to foster tensions between groups.

We also find consistent evidence that community disadvantage and residential (in)stability play important roles in minorities’ harassment experiences and fear of harassment. Higher disadvantage predicts higher victimisation, and fear of victimisation, while minorities in more residentially stable communities report lower likelihoods of being a victim of harassment (although residential stability has no association with fear of harassment). Such findings point towards social disorganisation theories, where disadvantage/residential instability reduce cohesion and people's engagement in social control (Shaw and Mckay, 1942). The positive association between disadvantage and harassment is also in line with theories that disadvantage may stimulate perceived threat, triggering harassment.

Our findings also broadly demonstrate that the same spatial drivers of actual experiences of harassment also drive minority-groups' fear of harassment; particularly, communities with lower minority-shares, higher segregation, higher disadvantage and which have more recently experienced larger demographic-change. The results suggest a key reason these community-level drivers matter for fear of harassment may be via both direct and indirect experiences of actual harassment. As expected, individuals with personal experiences of harassment are much more likely to fear future harassment. Nonetheless, even individuals who did not recently experience harassment but have close social contacts who did (a household member) also report higher fear of harassment. We suggest this represents a spill-over effect of sorts, whereby harassment not only affects the victim themselves but can also shape the attitudes of the broader community through the transmission of information.

Interestingly, these direct- and indirect-effects of actual harassment experiences account for a substantial part of the association between community characteristics and individuals' fear of harassment. Thus, the reason fear of harassment is higher in certain areas may be because individuals are more likely to have experienced harassment and more likely to know someone who has experienced harassment. While the UKHLS data only permits us to test if household-members' harassment shapes one’s fear of harassment, we presume community harassment (experiences among friends, neighbours, colleagues) may also play a significant role.

Lastly, testing the spatial drivers of harassment across multiple geographical scales sheds light on the spatial-scale at which community-variables have significant associations with harassment.. Individuals’ more local areas (e.g., their LSOA/MSOA) appear to be most likely to show significant associations for harassment (particularly the segregation and disadvantage). However, regarding effect-sizes, the results also show that for some drivers (e.g., minority-group size), associations are stronger at larger geographic scales (Local Authority). However, given the confidence intervals of effect-sizes for each variable overlap substantially across LSOA-, MSOA- and LA-levels, it is only on statistical significance that we can more confidently infer differences in effects across spatial-scales. Accordingly, effects are more consistent across localised scales, especially the MSOA-level. Future work would thus benefit from testing contextual-effects over multiple scales to explore where contextual-processes are most salient for different outcomes.

Despite the contributions of this study, there are limitations. Firstly, there remain questions over causal robustness. We find some evidence that the association between community characteristics and individuals' harassment is not solely endogenous, demonstrating that present conditions predict future harassment even after accounting for present harassment. Still, selection remains an issue for the analysis for both the individuals who experience the harassment (whether harassment predicts neighbourhood-choice) and the perpetrators of harassment in the wider community (whether individuals with a greater/lesser likelihood of harassing minorities select into certain areas). More causally-robust approaches would also help test the idea that communities affect fear of harassment via actual harassment as our findings could demonstrate that communities predict both simultaneously. Future work that examines the dynamic relationship between communities and harassment is thus critical. Secondly, research that is able to more accurately pinpoint both the geo-location of residents and harassment events themselves will allow us to more precisely test theories such as the ‘Contested Boundaries’ thesis, to better unpack the dynamics of community ethnic structure and harassment (Legewie and Schaeffer, 2016). The third limitation is focusing on the spatial drivers of harassment among minorities as a single group. Potentially, differences across sub-groups (e.g., immigration histories, processes of racialisation) may affect how spatial processes operate across sub-groups. While beyond the scope of the paper, initial analyses replicating our models for each minority sub-group shows the effects hold for Asian and Black groups (Appendix Tables 10a-10f). In addition, future work will be necessary to distinguish majority-minority harassment from minority-minority harassment for validating the findings here.

Conclusion

Our findings demonstrate that space plays a key role in understanding patterns of interethnic harassment in Britain, as previously demonstrated in the US. This also applies to a broader constellation of harassment experiences, including both acute-harassment, such as assault, and less severe experiences, such as being ‘insulted, called names, threatened or shouted at’. These findings are relevant given that the current policy pursued by British government ministries is pushing for a dual focus on addressing both harassment and fear of crime (e.g., Anti-Social Behaviour, Crime and Policing Act 2014). Part of this initiative focuses on integrating minorities and reducing crime. However, the importance that community-level processes might play in crime reduction remains underdeveloped. Our findings suggest these are highly salient and warrant incorporating into policy-frameworks.

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**Table 1 -Summary of Descriptive Statistics**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variable | Obs | Mean | Std. Dev. | Min | Max |
| **Dependent Variables** |  |  |  |  |  |
| Harassment | 22475 | .091 | .404 | 0 | 6 |
| Fear of harassment | 22303 | .24 | .746 | 0 | 6 |
| **Independent Variables** |  |  |  |  |  |
| Age | 38479 | 40.773 | 16.829 | 16 | 101 |
| **Country** |  |  |  |  |  |
| England | 37626 | .952 | .214 | 0 | 1 |
| Scotland | 37626 | .026 | .159 | 0 | 1 |
| Wales | 37626 | .022 | .148 | 0 | 1 |
| **Tenure** |  |  |  |  |  |
| Home Ownership | 37513 | .596 | .491 | 0 | 1 |
| Social Rented | 37513 | .239 | .426 | 0 | 1 |
| Private Rented | 37513 | .165 | .371 | 0 | 1 |
| **Education** |  |  |  |  |  |
| Degree | 36615 | .404 | .491 | 0 | 1 |
| A Level | 36615 | .291 | .454 | 0 | 1 |
| GCSE | 36615 | .305 | .46 | 0 | 1 |
| **Ethnicity** |  |  |  |  |  |
| White British | 32885 | 0 | 0 | 0 | 0 |
| Other White | 32885 | .149 | .356 | 0 | 1 |
| Mixed | 32885 | .086 | .281 | 0 | 1 |
| Indian | 32885 | .183 | .386 | 0 | 1 |
| Pakistani/Bangladeshi | 32885 | .259 | .438 | 0 | 1 |
| Other Asian | 32885 | .073 | .259 | 0 | 1 |
| Black | 32885 | .211 | .408 | 0 | 1 |
| Other Groups | 32885 | .04 | .196 | 0 | 1 |
| **UK Born** |  |  |  |  |  |
| Not UK Born | 36920 | .584 | .493 | 0 | 1 |
| UK Born | 36920 | .416 | .493 | 0 | 1 |
| **Gender** |  |  |  |  |  |
| Male | 38495 | .472 | .499 | 0 | 1 |
| Female | 38495 | .528 | .499 | 0 | 1 |
| **Religion** |  |  |  |  |  |
| No religion | 38500 | .148 | .355 | 0 | 1 |
| Christian | 38500 | .194 | .396 | 0 | 1 |
| Non-Christian | 38500 | .329 | .47 | 0 | 1 |
| Unknown | 38500 | .328 | .47 | 0 | 1 |
| **Wave** |  |  |  |  |  |
| Wave 3 | 38500 | .265 | .441 | 0 | 1 |
| Wave 5 | 38500 | .239 | .427 | 0 | 1 |
| Wave 7 | 38500 | .279 | .449 | 0 | 1 |
| Wave 9 | 38500 | .217 | .412 | 0 | 1 |
| **Economic Status** |  |  |  |  |  |
| Employed | 38449 | .563 | .496 | 0 | 1 |
| Unemployed | 38449 | .073 | .259 | 0 | 1 |
| Inactive | 38449 | .241 | .428 | 0 | 1 |
| FT Student | 38449 | .123 | .328 | 0 | 1 |
| **Household Harassment** |  |  |  |  |  |
| 1. No personal/household harassment | 25471 | .882 | .323 | 0 | 1 |
| 2. No personal but household harassment | 25471 | .053 | .223 | 0 | 1 |
| 3. Personal harassment but no household harassment | 25471 | .056 | .229 | 0 | 1 |
| 4. Personal and household harassment | 25471 | .01 | .1 | 0 | 1 |
| **Community Level** |  |  |  |  |  |
| **LSOA** |  |  |  |  |  |
| Urb-Rural LSOA | 37626 | 1.392 | .659 | 1 | 4 |
| Resource Disadvantage LSOA | 37626 | .43 | .99 | -1.318 | 4.428 |
| % 65+ LSOA | 37626 | .12 | .06 | .005 | .738 |
| % Same Address LSOA | 37626 | .866 | .076 | .106 | .975 |
| % non-white LSOA | 37626 | .409 | .287 | 0 | .989 |
| White v non-white Segregation OALSOA | 37626 | .181 | .107 | 0 | .855 |
| % Change non-white LSOA | 37626 | .1 | .082 | -.266 | .461 |
| **MSOA** |  |  |  |  |  |
| Urb-Rural MSOA | 37626 | 1.392 | .662 | 1 | 4 |
| Resource Disadvantage MSOA | 37626 | .486 | 1.006 | -1.361 | 4.182 |
| % 65+ MSOA | 37626 | .12 | .052 | .015 | .387 |
| % Same Address MSOA | 37626 | .861 | .071 | .306 | .956 |
| % non-white MSOA | 37626 | .396 | .272 | .004 | .944 |
| White v non-white Segregation OAMSOA | 37626 | .242 | .104 | .051 | .805 |
| % Change non-white MSOA | 37626 | .099 | .072 | -.149 | .429 |
| **LA** |  |  |  |  |  |
| Resource Disadvantage LA | 37626 | .525 | .944 | -1.672 | 2.753 |
| % 65+ LA | 37626 | .131 | .04 | .062 | .297 |
| % Same Address LA | 37626 | .861 | .04 | .734 | .935 |
| % non-white LA | 37626 | .306 | .197 | .007 | .709 |
| White v non-white Segregation OALA | 37626 | .385 | .121 | .177 | .705 |
| % Change non-white LA | 37626 | .087 | .051 | .002 | .269 |
|  | | | | | |

**Table 2 - Community-level predictors of actual harassment experiences among non-Whites**

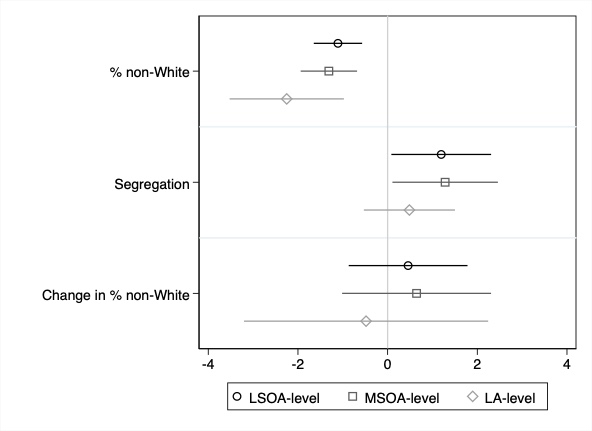
|  |  |  |  |
| --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 |
|  | **Actual** | **Actual** | **Actual** |
|  | **Harassment** | **Harassment** | **Harassment** |
|  | **LSOA** | **MSOA** | **LA** |
|  |  |  |  |
| Age | 0.055\*\* | 0.054\*\* | 0.054\*\* |
|  | (0.019) | (0.019) | (0.018) |
| Age (quadratic) | -0.001\*\*\* | -0.001\*\*\* | -0.001\*\*\* |
|  | (0.000) | (0.000) | (0.000) |
| Tenure (cf. Home owner) |  |  |  |
| Social renting | 0.146 | 0.186 | 0.269+ |
|  | (0.135) | (0.130) | (0.138) |
| Private renting | 0.210 | 0.231+ | 0.247+ |
| Religion (cf. No religion) |  |  |  |
| Christian | -0.017 | -0.028 | 0.004 |
|  | (0.158) | (0.158) | (0.163) |
| Non-Christian (Muslim, Hindu, Sikh) | 0.091 | 0.051 | 0.049 |
|  | (0.162) | (0.164) | (0.175) |
| Other | 0.087 | 0.059 | 0.112 |
|  | (0.192) | (0.194) | (0.190) |
| Employment status (cf. Employed) |  |  |  |
| Unemployed | -0.323+ | -0.344\* | -0.345\* |
|  | (0.170) | (0.175) | (0.154) |
| Inactive | -0.190 | -0.235 | -0.240 |
|  | (0.150) | (0.153) | (0.166) |
| In education | -0.159 | -0.185 | -0.157 |
|  | (0.168) | (0.169) | (0.172) |
| Country of residence (cf. England) |  |  |  |
| Scotland | -0.074 | -0.196 | -0.034 |
|  | (0.358) | (0.313) | (0.307) |
| Wales | -0.500 | -0.498 | -0.681 |
|  | (0.512) | (0.519) | (0.538) |
| Ethnicity (cf. Other White) |  |  |  |
| Mixed | 0.545\* | 0.531\* | 0.437 |
|  | (0.268) | (0.266) | (0.276) |
| Indian/P&B | 0.794\*\* | 0.778\*\* | 0.650\* |
|  | (0.256) | (0.256) | (0.259) |
| Pakistani/Bangladeshi | 1.379\*\*\* | 1.305\*\*\* | 1.099\*\*\* |
|  | (0.252) | (0.248) | (0.250) |
| Other Asian | 0.943\*\*\* | 0.924\*\*\* | 0.880\*\*\* |
|  | (0.254) | (0.246) | (0.248) |
| Black | 0.838\*\*\* | 0.854\*\*\* | 0.763\*\* |
|  | (0.233) | (0.229) | (0.237) |
| Other groups | 0.723\* | 0.737\* | 0.717\* |
|  | (0.333) | (0.324) | (0.298) |
| Qualifications (cf. Degree/Other higher) |  |  |  |
| A-level/equivalent | -0.132 | -0.149 | -0.178 |
|  | (0.116) | (0.118) | (0.119) |
| GCSE/equivalent | -0.209 | -0.238+ | -0.223 |
|  | (0.136) | (0.137) | (0.142) |
| No education | -0.353 | -0.417 | -0.492 |
|  | (0.319) | (0.319) | (0.302) |
| Sex (cf. Male) |  |  |  |
| Female | -0.209\* | -0.204\* | -0.193\* |
|  | (0.093) | (0.095) | (0.090) |
| Country born (cf. Not UK born) |  |  |  |
| UK born | 0.095 | 0.066 | 0.047 |
|  | (0.130) | (0.129) | (0.135) |
| National identification (cf. British only) |  |  |  |
| English & British | 0.085 | 0.147 | 0.130 |
|  | (0.237) | (0.242) | (0.252) |
| English only | -0.205 | -0.185 | -0.180 |
|  | (0.185) | (0.189) | (0.197) |
| Other | -0.064 | -0.076 | -0.109 |
|  | (0.123) | (0.123) | (0.120) |
| Wave (cf. Wave 3) |  |  |  |
| Wave 5 | -0.476\*\*\* | -0.457\*\*\* | -0.473\*\*\* |
|  | (0.127) | (0.126) | (0.128) |
| Wave 7 | -0.266\* | -0.274\* | -0.296\* |
|  | (0.121) | (0.118) | (0.126) |
| Wave 9 | -0.187 | -0.181 | -0.161 |
|  | (0.128) | (0.126) | (0.131) |
| Urban-Rural area (cf. Major/Minor Conurbation) |  |  |  |
| City/Town | 0.098 | 0.036 | 0.007 |
|  | (0.126) | (0.128) | (0.154) |
| Town and Fringe | 0.293 | 0.039 | 0.025 |
|  | (0.348) | (0.357) | (0.327) |
| Village, Hamlets and Isolated Dwellings | -0.122 | -0.131 | -0.153 |
|  | (0.538) | (0.524) | (0.525) |
| Resource disadvantage | 0.252\*\*\* | 0.246\*\*\* | 0.156+ |
|  | (0.062) | (0.068) | (0.089) |
| % 65+ | -0.345 | 0.704 | -1.934 |
|  | (1.264) | (1.780) | (3.543) |
| % Same Address 1 year ago | -1.044 | -1.700\* | -1.155 |
|  | (0.649) | (0.756) | (2.074) |
| % non-white | -1.043\*\*\* | -1.347\*\*\* | -2.302\*\*\* |
|  | (0.276) | (0.322) | (0.659) |
| White v non-White Segregation | 1.252\* | 1.396\* | 0.550 |
|  | (0.566) | (0.597) | (0.525) |
| Change % non-white | 0.403 | 0.693 | -0.404 |
|  | (0.673) | (0.850) | (1.403) |
|  |  |  |  |
| Constant | -3.093\*\*\* | -2.621\*\*\* | -1.983 |
|  | (0.709) | (0.749) | (1.576) |
|  |  |  |  |
| N | 17046 | 17046 | 17046 |

*Notes*: ; + p<0.1; \* p<0.05; \*\* p<0.01; \*\*\* p<0.001; standard errors in parentheses; models contain all individual-level covariates (although not shown)

**Table 3 - Community-level predictors of fear of harassment experiences among non-Whites and the mediating role of actual harassment experiences**

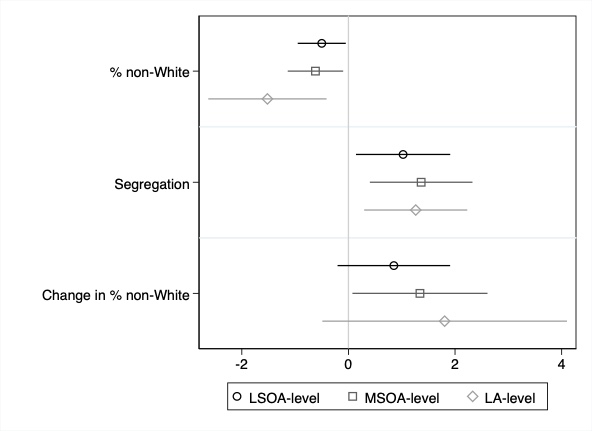
|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| Type of Harassment | Fear | Fear | Fear | Fear | Fear | Fear |
|  | Harass | Harass | Harass | Harass | Harass | Harass |
| Geographical Scale | LSOA | LSOA | MSOA | MSOA | LA | LA |
|  |  |  |  |  |  |  |
| Age | 0.055\*\*\* | 0.050\*\*\* | 0.052\*\*\* | 0.047\*\*\* | 0.053\*\*\* | 0.048\*\*\* |
|  | (0.014) | (0.014) | (0.014) | (0.014) | (0.015) | (0.014) |
| Age (quadratic) | -0.001\*\*\* | -0.001\*\*\* | -0.001\*\*\* | -0.001\*\*\* | -0.001\*\*\* | -0.001\*\*\* |
|  | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Tenure (cf. Home owner) |  |  |  |  |  |  |
| Social renting | -0.021 | -0.098 | 0.018 | -0.078 | 0.117 | -0.028 |
|  | (0.111) | (0.107) | (0.108) | (0.105) | (0.110) | (0.112) |
| Private renting | 0.021 | -0.023 | 0.042 | -0.005 | 0.081 | 0.012 |
|  | (0.114) | (0.109) | (0.114) | (0.109) | (0.115) | (0.111) |
| Religion (cf. No religion) |  |  |  |  |  |  |
| Christian | 0.196 | 0.162 | 0.162 | 0.131 | 0.166 | 0.109 |
|  | (0.139) | (0.132) | (0.139) | (0.135) | (0.150) | (0.142) |
| Non-Christian (Muslim, Hindu, Sikh) | 0.469\*\*\* | 0.453\*\* | 0.397\*\* | 0.397\*\* | 0.356\* | 0.345\* |
|  | (0.140) | (0.138) | (0.144) | (0.143) | (0.154) | (0.154) |
| Other | 0.333\* | 0.295+ | 0.265+ | 0.242 | 0.271+ | 0.204 |
|  | (0.159) | (0.154) | (0.160) | (0.159) | (0.152) | (0.163) |
| Employment status (cf. Employed) |  |  |  |  |  |  |
| Unemployed | 0.178 | 0.320\* | 0.154 | 0.282\* | 0.187 | 0.321+ |
|  | (0.130) | (0.131) | (0.131) | (0.134) | (0.137) | (0.164) |
| Inactive | -0.055 | 0.029 | -0.103 | -0.007 | -0.062 | 0.033 |
|  | (0.118) | (0.117) | (0.119) | (0.116) | (0.128) | (0.120) |
| In education | 0.078 | 0.178 | 0.057 | 0.164 | 0.078 | 0.157 |
|  | (0.134) | (0.138) | (0.136) | (0.140) | (0.149) | (0.158) |
| Country of residence (cf. England) |  |  |  |  |  |  |
| Scotland | -0.219 | -0.252 | -0.311 | -0.303 | -0.334 | -0.354 |
|  | (0.322) | (0.313) | (0.313) | (0.323) | (0.331) | (0.364) |
| Wales | 0.130 | 0.195 | 0.062 | 0.127 | -0.118 | -0.001 |
|  | (0.335) | (0.278) | (0.338) | (0.284) | (0.295) | (0.258) |
| Ethnicity (cf. Other White) |  |  |  |  |  |  |
| Mixed | 0.542\* | 0.445+ | 0.523\* | 0.440+ | 0.482\* | 0.414+ |
|  | (0.247) | (0.245) | (0.251) | (0.247) | (0.245) | (0.242) |
| Indian/P&B | 1.057\*\*\* | 0.903\*\*\* | 1.029\*\*\* | 0.899\*\*\* | 0.929\*\*\* | 0.863\*\*\* |
|  | (0.219) | (0.203) | (0.220) | (0.203) | (0.242) | (0.223) |
| Pakistani/Bangladeshi | 1.691\*\*\* | 1.382\*\*\* | 1.632\*\*\* | 1.359\*\*\* | 1.447\*\*\* | 1.265\*\*\* |
|  | (0.214) | (0.196) | (0.215) | (0.196) | (0.236) | (0.215) |
| Other Asian | 1.087\*\*\* | 0.873\*\*\* | 1.061\*\*\* | 0.868\*\*\* | 1.010\*\*\* | 0.859\*\*\* |
|  | (0.212) | (0.196) | (0.214) | (0.197) | (0.234) | (0.206) |
| Black | 0.770\*\*\* | 0.597\*\* | 0.760\*\*\* | 0.594\*\* | 0.711\*\* | 0.624\*\* |
|  | (0.208) | (0.199) | (0.207) | (0.196) | (0.222) | (0.206) |
| Other groups | 0.907\*\*\* | 0.879\*\*\* | 0.855\*\*\* | 0.850\*\*\* | 0.787\*\* | 0.844\*\* |
|  | (0.263) | (0.249) | (0.259) | (0.243) | (0.256) | (0.271) |
| Qualifications (cf. Degree/Other higher) |  |  |  |  |  |  |
| A-level/equivalent | 0.018 | 0.016 | -0.011 | -0.014 | -0.020 | -0.005 |
|  | (0.088) | (0.084) | (0.089) | (0.085) | (0.088) | (0.087) |
| GCSE/equivalent | -0.168+ | -0.120 | -0.228\* | -0.172+ | -0.220\* | -0.152 |
|  | (0.100) | (0.096) | (0.100) | (0.096) | (0.092) | (0.093) |
| No education | -0.299 | -0.332 | -0.356 | -0.386+ | -0.361+ | -0.398+ |
|  | (0.241) | (0.213) | (0.240) | (0.211) | (0.217) | (0.205) |
| Sex (cf. Male) |  |  |  |  |  |  |
| Female | 0.131+ | 0.212\*\* | 0.119 | 0.204\*\* | 0.105 | 0.191\* |
|  | (0.075) | (0.076) | (0.077) | (0.078) | (0.089) | (0.085) |
| Country born (cf. Not UK born) |  |  |  |  |  |  |
| UK born | -0.108 | -0.101 | -0.160 | -0.138 | -0.199+ | -0.164 |
|  | (0.097) | (0.092) | (0.098) | (0.094) | (0.109) | (0.102) |
| National identification (cf. British only) |  |  |  |  |  |  |
| English & British | 0.128 | 0.135 | 0.172 | 0.178 | 0.137 | 0.169 |
|  | (0.180) | (0.178) | (0.188) | (0.177) | (0.185) | (0.170) |
| English only | 0.171 | 0.207 | 0.149 | 0.194 | 0.183 | 0.220 |
|  | (0.140) | (0.135) | (0.140) | (0.137) | (0.165) | (0.148) |
| Other | -0.148 | -0.097 | -0.151 | -0.091 | -0.116 | -0.034 |
|  | (0.094) | (0.088) | (0.096) | (0.089) | (0.113) | (0.107) |
| Wave (cf. Wave 3) |  |  |  |  |  |  |
| Wave 5 | -0.642\*\*\* | -0.506\*\*\* | -0.617\*\*\* | -0.493\*\*\* | -0.591\*\*\* | -0.473\*\*\* |
|  | (0.103) | (0.105) | (0.105) | (0.105) | (0.121) | (0.117) |
| Wave 7 | -0.496\*\*\* | -0.426\*\*\* | -0.516\*\*\* | -0.446\*\*\* | -0.513\*\*\* | -0.449\*\*\* |
|  | (0.090) | (0.095) | (0.090) | (0.094) | (0.110) | (0.110) |
| Wave 9 | -0.144 | -0.105 | -0.153 | -0.120 | -0.167 | -0.159 |
|  | (0.096) | (0.092) | (0.095) | (0.093) | (0.111) | (0.111) |
| Urban-Rural area (cf. Major/Minor Conurbation) |  |  |  |  |  |  |
| City/Town | 0.202+ | 0.200\* | 0.234\* | 0.258\* | 0.225 | 0.254+ |
|  | (0.104) | (0.096) | (0.111) | (0.103) | (0.141) | (0.134) |
| Town and Fringe | -0.273 | -0.436 | -0.369 | -0.400 | -0.413 | -0.422 |
|  | (0.377) | (0.336) | (0.388) | (0.328) | (0.394) | (0.333) |
| Village, Hamlets and Isolated Dwellings | 0.011 | 0.033 | -0.056 | 0.151 | -0.109 | 0.076 |
|  | (0.467) | (0.449) | (0.473) | (0.492) | (0.506) | (0.538) |
| Resource disadvantage | 0.238\*\*\* | 0.171\*\*\* | 0.257\*\*\* | 0.215\*\*\* | 0.179\* | 0.134 |
|  | (0.050) | (0.048) | (0.056) | (0.054) | (0.082) | (0.091) |
| % 65+ | -2.598\* | -2.600\* | -0.677 | -1.188 | -2.120 | -2.567 |
|  | (1.116) | (1.074) | (1.626) | (1.573) | (3.078) | (3.181) |
| % who were in the Same Address 1 year ago | -0.197 | 0.305 | -0.757 | -0.036 | -0.798 | -0.194 |
|  | (0.620) | (0.588) | (0.769) | (0.746) | (1.864) | (1.860) |
| % non-white | -0.562\* | -0.286 | -0.702\*\* | -0.387 | -1.612\*\* | -1.046+ |
|  | (0.219) | (0.204) | (0.255) | (0.249) | (0.540) | (0.543) |
| White v non-White Segregation | 1.046\* | 0.731+ | 1.123\* | 0.666 | 1.145\* | 1.186\* |
|  | (0.455) | (0.427) | (0.463) | (0.421) | (0.500) | (0.449) |
| Change % non-white | 0.966+ | 0.773 | 1.416\* | 1.139+ | 2.021+ | 1.983\* |
|  | (0.521) | (0.492) | (0.627) | (0.609) | (1.071) | (1.008) |
| Baseline: No personal/No household harassment |  |  |  |  |  |  |
| No personal harassment/Yes household harassment |  | 0.751\*\*\* |  | 0.737\*\*\* |  | 0.716\*\*\* |
|  |  | (0.104) |  | (0.106) |  | (0.099) |
| Yes personal harassment/No household harassment |  | 2.258\*\*\* |  | 2.225\*\*\* |  | 2.157\*\*\* |
|  |  | (0.079) |  | (0.079) |  | (0.086) |
| Yes personal harassment/Yes household harassment |  | 2.295\*\*\* |  | 2.222\*\*\* |  | 2.213\*\*\* |
|  |  | (0.147) |  | (0.150) |  | (0.168) |
|  |  |  |  |  |  |  |
| Constant | -3.442\*\*\* | -4.201\*\*\* | -3.137\*\*\* | -4.013\*\*\* | -2.627\* | -3.659\*\* |
|  | (0.616) | (0.593) | (0.665) | (0.641) | (1.321) | (1.268) |
|  |  |  |  |  |  |  |
| N | 16847 | 16847 | 16847 | 16847 | 16847 | 16847 |

*Notes*: ; + p<0.1; \* p<0.05; \*\* p<0.01; \*\*\* p<0.001; standard errors in parentheses; models contain all individual-level covariates (although not shown)



**Figure 1** Coefficient plot: effect of community ethnic composition, segregation, and ethnic change on actual harassment across geographic-scales (LSOA, MSOA, LA).

*Notes:* 95% CI



**Figure 2** Coefficient plot: effect of community ethnic composition, segregation, and ethnic change on fear of harassment across geographic-scales (LSOA, MSOA, LA).

*Notes:* 95% CI

1. Both authors contributed equally to the paper [↑](#footnote-ref-2)
2. Appendix Table 2 shows a medium correlation between per cent non-white and per cent 65+ (r=.627). However, models including/excluding either variable return substantively identical findings, suggesting estimates are unlikely to be significantly affected by their correlation. [↑](#footnote-ref-3)
3. With observations nested in individuals nested in households nested in communities, we essentially require a three-level model. However, given the computational intensity of this, we ran two-level models (observations in individuals in communities). Select three-level models revealed highly similar results. [↑](#footnote-ref-4)
4. We also tested whether the impact of change in the minority population in an area is conditional on the prior level of ethnic minorities in an area. However, we found no evidence of this. [↑](#footnote-ref-5)