

Diversity, density and turnout: The effect of neighbourhood ethno-religious composition on voter turnout in Britain

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Abstract

Political scientists and sociologists on both sides of the Atlantic have made various, sometimes contradictory claims, about the impact of ethnic, racial and religious diversity, segregation and density on the social cohesion of neighbourhoods and levels of social trust and civic engagement. In this paper we examine differences in turnout between electors of different religious origins, and how this varies by neighbourhood context, using a case study of the British General Election of 2001. Specifically we test whether turnout of religious minorities is higher in neighbourhoods where these populations are most concentrated and/or most diverse and contrast this with the equivalent patterns for the majority population. We find that in general turnout is neither higher nor lower in more diverse neighbourhoods, but despite this, the turnout of minority groups increases as diversity and, more notably, the size of the minority population, increases. The findings support the ‘mobilisation hypothesis’.

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Introduction

Political geographers have long been interested in the role of neighbourhood context in shaping people’s political behaviour (e.g. Cox, 1969). Recently there has been widespread interest in the impact of the racial, ethnic and religious diversity of neighbourhoods on civic life in general

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(e.g. Alesina & La Ferrara, 2000, 2002; Costa & Kahn, 2003; Putnam, in press) and political participation more specifically (e.g. Hero, 1998; Hill & Leighley, 1999; Kohfeld & Sprague, 2002; Schlichting, Tuckel, & Maisel, 1998). In the U.K. context Fieldhouse and Cutts (2007) found that British Muslim electoral registration was higher where there were greater proportions of Muslims in the electorate, whilst Laurence and Heath (2008) show that ethnic diversity has positive impacts on social cohesion. These findings have huge importance in the context of ongoing debates about the impact of diversity and segregation on social cohesion (see for example, Commission on Integration and Cohesion, 2007). If a similar pattern proves to be replicated for electoral turnout, then it has important implications for our understanding of how spatial context (specifically ethno-religious diversity and density) shapes the processes by which voters engage in conventional politics. Whilst some well established theories would suggest assimilation and dispersion of minority groups might lead to enhanced levels of participation (Alesina & La Ferrara, 2000; Dahl, 1961), our evidence suggests the opposite (cf. Wolfinger, 1965). That is, the findings are consistent with those theories that predict higher levels of group consciousness and mobilisation in areas where minority groups are most concentrated (e.g. Huckfeldt, 1986).

In this paper we use evidence from marked electoral registers for a sample of over half a million electors at the 2001 British General Election to estimate turnout rates at a number of different levels of geography with a high degree of accuracy, and provide comparative estimates for different British Asian¹ communities and the rest of the population. We use these estimates to explore the relationship between the geographical concentration of Asian populations, the diversity of areas, and variations in the turnout. In the U.S. context, in the 1960s, Mathews and Prothro (1966) found the most important county characteristic for Negro participation is the percentage of the Negro population. More recently, Schlichting et al. (1998) found that that turnout in racially homogeneous neighbourhoods was higher than in more diverse settings. Similarly, Hero and Tolbert (2007) found that states with more diverse racial populations have lower levels of turnout. We find evidence in favour of what we refer to as the ‘ethnic mobilisation’ hypothesis in a British context. That is we find that turnout increases amongst the minority population as the size of that minority population increases in the locality. We also demonstrate that in the British context, where in comparison with the U.S. populations are not highly segregated, for minority groups greater concentration of or ‘exposure’ to ones own group is more important than ethnic diversity.

Towards a geographical understanding of ‘ethnic mobilisation’

Various explanations have been put forward as to why rates of turnout for minority groups may be lower (or indeed higher) than that of the majority population (Olsen, 1970; Pelissero, Krebs, & Jenkins, 2000; Rosenstone & Hansen, 1993; Southwell & Pirch, 2003; Verba, Schlozman, & Brady, 1995). Some theories such as the racial diversity thesis (Hero, 1998) explicitly predict different outcomes depending on the racial composition of an area. Furthermore, by implication, more general theories of ethnic minority participation would also predict varying levels of engagement according to the ethnic or racial composition of the locality. Whilst this implication is not always explicit in the theory, it may follow logically that the geographical context will shape the contingent circumstances in which a theory’s predictions are manifested.

¹ We adopt the able British Asian or Asian as short hand for resident British populations whose families originate from the Indian sub-continent (India, Pakistan, Bangladesh and Sri Lanka) including those born in Britain.

For example, resource based theories (Verba & Nie, 1972; Verba, Schlozman, Brady, & Nie, 1993) would predict a distinctive map of turnout for minority groups based on their social or economic geography. Similarly, group-conflict theories (Giles & Evans, 1985) should play out according to the local ethnic or racial profile of the neighbourhood. Equally social connectedness or social capital is in part geographically determined (Putnam, 2000) as is group consciousness or identity (Miller, Gurin, Gurin, & Malanchuk, 1981; Shingles, 1981). In other words, different theoretical perspectives will lead to different expectations of geographical patterns of minority and, for that matter, majority turnout. We now attempt to separate these perspectives and expectations into two camps.

Mobilising forces in ethnic and religious enclaves

There are a number of theoretical starting points and relevant empirical evidence that might lead us to expect that areas with large and vibrant Asian communities should have higher levels of turnout. For example, social capital theory might predict higher levels of bonding social capital in areas where a racial, religious or ethnic group is more spatially concentrated. Thus turnout might be enhanced through political mobilisation within those communities, generated through social connectedness and community networks.

The basis for these networks and how they are used to mobilise electors for political ends may be secular or religious. Verba et al. (1993), for example, demonstrate the mobilising effect of churches on Black American participation. In Britain, in recent elections, it is widely recognised that Muslim community leaders and political groups (e.g. the Muslim Council of Britain) have encouraged participation amongst British Muslims in a similar way. Elsewhere it has been noted that such mobilisation effects will naturally be stronger where communities are more populous (and vice versa). Schlichting et al. (1998) suggest that 'the demographic concentration of minority members within a compact spatial area would facilitate the growth of political organisations and the ability to mobilise rank and file members' (Schlichting et al., 1998). The corollary of this is that the incentive for political leadership to mobilise dispersed populations – for example Asian American voters – is lower because of their geographic dispersion (Uhlener, Cain, & Kiewiet, 1989).

According to the ethnic community model, greater group consciousness or awareness tends to be correlated with higher participation. It was noted by a number of scholars in the 1950s and 1960s that the concentration of an ethnic group in a geographical area provides reinforcement for the political expression of common interests and consequently, the geographical concentration of a group usually results in higher levels of political participation by its members (Lipset, Lazarsfeld, Barton, & Linz, 1954). More recently, Huckfeldt (1986) argued that people living in incongruous social environments are less likely to participate. This may be especially evident where the average sense of efficacy amongst the group is high but sense of trust is low (Shingles, 1981), although this pattern has generally been found for high-initiative participation (e.g. being involved in party campaigns), and there is less clear evidence that low-initiative activities such as voting are similarly affected (Guterbock & London, 1983; Lien, 1994). Notwithstanding this, it is plausible, as Schlichting et al. (1998) argue 'an ethnic community is more likely to emerge among minority members who live in areas populated mainly or exclusively by minority residents'.

Similarly, according to group-conflict theory greater neighbourhood diversity may lead to higher levels of conflict and hence have a mobilising effect on the minority population (Blalock, 1967). In the United States, suburbanisation over the last 50 years has led to the 'political fragmentation and institutionalising of social differences among residents of a common

metropolitan area' (Oliver, 2000). Suburbanisation has created smaller political entities which promote civic engagement (Oliver, 1999, 2001). However, when 'small size advantages' have been used to foster pockets of economic and racial homogeneity, civic participation is undermined. As political conflict and competition for resources are removed through concentrating problems in more racially diverse urban areas (Oliver & Mendleberg, 2000) and separating the 'suburban pocket' with municipal boundaries, the incentive for citizens to participate seems to decline (Oliver, 2001). Leighley and Vedlitz (1999) show that, for Anglos, the percentage of the population *not* belonging to the subjects own ethnic or racial group has a depressing effect on turnout.

In summary, together with the mobilising influence of local community institutions and parties, the asymmetric effect of 'threat' might lead us to expect higher Asian turnout rates in neighbourhoods with a larger percentage Asian population. This is the mobilisation hypothesis.

Marginalising forces in ethnic and religious enclaves

Competing theories, however, throw up opposite predictions, and some studies have found evidence contradicting the mobilisation hypothesis. In the 1960s in the American South, for example, Mathews and Prothro (1966) showed a negative relationship between the concentration of Black Americans and black registration, and put this down largely to the geographical pattern of repressive attitudes of white electors and the associated 'internalized restraint' of black electors (see also Key, 1949). Massey and Denton (1989, 1993) claimed that hyper-segregation of urban Blacks in America during the 1970s led to their social and economic withdrawal from mainstream society which itself precipitated lower levels of political participation. The racial diversity thesis contends that that racially bifurcated states tend to display greater social, political and economic inequality and lower levels of participation (Hero, 1998).

In a modern British context we might consider theories of relative deprivation and economic resources to be more relevant. Typically, Asians in Britain tend to be more working class and suffer higher levels of deprivation than the majority white population (Peach, 2006). The settlement patterns of Britain's Asian communities (Robinson, 1986), historically aided by discriminatory housing policies, fear of racial harassment and lower property prices in dilapidated inner city areas (Amin, 2002; Kundnani, 2001), has led to the poorest sections of those communities to live in areas with the greatest concentrations of Asian population. A lack of affluence has resulted in lower levels of dispersal, most notably among the second generation compared with most non-white groups and those born outside the U.K. (Phillips, 1998). Conversely, the most educated, middle class sections of the Asian population, particularly those of Indian origin are more likely to live in more suburban, predominantly white, areas. According to theories of acculturation, the latter are more likely to be integrated into the host society and more likely to participate (Lien, 1994). By contrast, higher levels of relative deprivation or poverty may lead us to expect greater alienation and lower levels of turnout where Asian populations are more concentrated.

It has previously been argued that 'poor neighbourhoods foster a weak attraction to the political system' (Cohen & Dawson, 1993) and, that high levels of racial or ethnic diversity are negatively associated with participation (particularly turnout) due to weaker mobilising institutions and higher barriers to participation (Hill & Leighley, 1999). Furthermore, an alternative interpretation of group consciousness theories (referred to above) is that that such consciousness may cause alienation and inhibited activity (Guterbock & London, 1983).

Putnam has recently argued that neighbourhoods with greater diversity and high levels of immigration have lower levels of interpersonal trust (Putnam, *in press*; see also

Alesina & La Ferrara, 2002). Marschall and Stolle (2004) also stress the importance of the neighbourhood context in building generalised trust and shaping civic orientations but note that both formal and informal interaction in racially diverse settings having a positive effect on generalised trust. Yet, trust development is found to work differently for blacks and whites. In particular, neighbourhood racial heterogeneity increases blacks propensity to trust others while generalised trust is less likely to develop among whites who live in disadvantaged neighbourhoods.² Evidence of a similar relationship in the U.K. is limited, but mixed (see Home Office, 2005; Letki, 2008).

In summary, the combination of acculturation in the suburbs together with alienation, weakened social trust and demobilisation in the deprived ‘enclaves’, might lead us to expect lower levels of turnout amongst Asians in areas with a larger percentage Asian population. We call this the marginalisation hypothesis.

Hypotheses

These conflicting expectations lead to competing hypotheses. The main generalised hypothesis is that local context measured in terms of either diversity and/or density of religious minority groups will affect the electoral participation of those groups and that these relationships should be robust after controlling for key socio-economic, demographic and political characteristics of areas. The distinction between diversity and density here is an important one. Where much of the previous work cited above has focussed on diversity as measured by the widely used index of ethnic (or racial) fragmentation (e.g. Alesina & La Ferrara, 2002). We also examine an alternative measure capturing minority density (or exposure/isolation) (see Massey & Denton, 1993). This is important because the reasoning behind the mobilisation hypothesis suggests it is living in cohesive communities of similar and like-minded people that will generate mobilising forces amongst minority groups. Density simply captures the extent to which a member of a racial/ethnic group is likely to be in contact with other members of this same group. Diversity or fragmentation on the other hand measures the probability that two randomly drawn individuals come from different groups. This is an important distinction, for example because areas with larger Asian populations may be less diverse if they are predominantly Asian. In keeping with the marginalisation perspective presented above we might expect that whilst density may be positively associated with the participation of minorities, diversity might be associated with lower turnout amongst all groups.

Thus the main hypothesis can be divided in three specific hypotheses:

H1. Asians living in areas where a larger proportion of the population shares the same ethno-religious origins are *more* likely to vote than those living outside of these areas.

And the alternative hypotheses:

H2. Asians living in areas with substantial populations sharing the same ethno-religious origins are *less* likely to vote than those living outside of these areas;

H3. All electors living in more religiously diverse areas are *less* likely to vote than those living in more homogeneous areas.

² Disadvantaged neighbourhoods were defined by the education levels of residents and their individual perceptions of problems in the area (see Marschall & Stolle, 2004 for full details).

Context and data

At 59%, turnout at the British General Election in 2001 was at its lowest since 1918. In British elections ethnic minority turnout has long been a cause for concern (Ali & Percival, 1993; Anwar, 1990; Purdam, Fieldhouse, Russell, & Kalra, 2002; Saggar, 1998). Whilst much previous research has shown that turnout amongst British Asians lags behind that of the majority population (Anwar, 1990; Saggar, 1998) there is evidence that this gap is narrowing (Anwar, 2001). Cutts, Fieldhouse, Purdam, Steel, and Tranmer (2007) show that Asian turnout was similar to, if not slightly higher than, the overall turnout rate in 2001.

Here we use marked registers from the 2001 election, for a sample of 97 wards, based on a stratified random sample. Using 1991 Census data, we stratified wards according to percentage Asian. Wards were sampled disproportionately in areas with a large Asian population to ensure the effective coverage of different subgroups. All electors were included in the selected wards, which were used as the primary sampling units or PSUs (see Fieldhouse & Cutts, 2007 for details). The marked registers were analysed using name recognition software (Nam Pehchan and SANGRA) which is able to identify names with a South Asian origin (i.e. from the Indian sub-continent). The overall sample contains over half a million electors, including nearly a 100,000 of South Asian origin.³

Registered electors ineligible to vote in the general election, including foreign nationals (eligible to vote in local elections) and attainers (17 year olds due to reach the age of 18 during the life of the register but after 7th June 2001) were excluded. Electors who had applied for a postal vote are also excluded as we have no evidence as to whether these votes were cast. Proxy voters are included as their votes are marked off at the polling station in the normal way.

All electors were allocated five geographical identifiers: household, street, Census output area, polling district and electoral ward. All identifiers were created using the address information on the electoral register (for example all persons listed under the same street were allocated the same street code). OAs are defined specifically for Census outputs and are designed to be relatively equal in size (around 200 households) and socially homogeneous.

Because the sample covers the full population of each PSU, we also have complete information about voting in each of the sampled units (whether that is household, street, OA, etc.). Because of the greater availability of contextual data at the ward and OA level, and also the greater extent of variation at these levels,⁴ we focus mainly on these levels of analysis. Although the clustered nature of the sample means that sampling errors are larger than would be expected under simple random sampling⁵ this design has considerable advantages when attempting to understand contextual influences on turnout. Furthermore, this is taken into account in the multilevel models which by design allow for clustering of similar individuals within higher level units.

³ For further discussion about the accuracy of the name recognition software (Nam Pehchan and SANGRA) see Fieldhouse and Cutts (2007) which includes a detailed technical discussion of the literature.

⁴ This was explored using multilevel variance components' models (see *Multivariate analyses*) including all five levels. Once other levels have been taken into account the street and polling district levels are not significant sources of variation.

⁵ For clarity, in the descriptive analysis we do not report sampling errors as these are affected by sample design. However, Cutts et al. (2007) do provide a full breakdown of turnout among different religious groups including sampling errors that adjust for sample design. The multilevel models reported below do provide robust sampling errors.

In the following analyses the diversity index is based on the ethnic and religious profile of the population which is drawn Census 2001 ward and OA ethnicity tables. There are 16 ethnic groups recorded in the 2001 Census. Density is defined simply as the percent of the population that any given ethno-religious group comprises, and diversity according to the standard fragmentation index.⁶ Thus unlike diversity, density takes a different value for different ethno-religious groups. For example, the density variable for Hindus is the percentage of the population in the OA/ward who are Hindi according to the Census.

Religious composition and turnout: bivariate evidence of mobilisation

The overall level of turnout in our sample after weighting was 58.4% (slightly lower than the official turnout rate due the exclusion of postal voters). The rate for Asians (59.4%) was approximately one percentage point higher than non-Asians (58.3%), with a higher rate for South Asian women than men.⁷ However, what is of significance here is not the general level of turnout in the different groups, but the way in which it varies geographically. We explore this by looking at the simple bivariate relationship between turnout and the diversity and ethnic-religious composition.

Table 1 shows, as hypothesised, there are weak but significant correlations between the turnout of each ethno-religious minority group and their density in the Census output area. In all cases these correlations are positive suggesting support for the mobilisation hypothesis (H1). Diversity on the other hand is significant and positive for Sikhs but not for Hindu and Muslims. In other words each of these groups is more likely to turnout where they are better represented in the population, but except for Sikhs, participation is not affected by diversity. It is also worth noting here that diversity is correlated with density but not especially highly (all correlations are lower than 0.5). Notably, the relationships for the majority, non-Asian, population are quite different. There is a weak positive correlation of non-Asian turnout with % Sikh and % Hindu (the former only at the 10% confidence level), but a negative correlation for the diversity index and % Muslim. In other words, the majority population living in more diverse (and more Muslim) areas are less likely to vote. The most striking distinction is between the positive correlation for turnout and density for Muslims and the negative correlation for turnout and % Muslim for non-Asians. In other words, as the Muslim population increases, Muslims vote in greater numbers whilst the turnout of the rest of the population decreases. This can be seen clearly in Fig. 1 which shows overall turnout and that of Muslims by the density of the Muslim population.

The graph shows there the negative relationship for overall levels of turnout as we move from areas of low Muslim density (less than 5%) to those of higher density (20%), before recovering to a higher rate for the areas of highest density. However, when you exclude all Asians from the analysis (i.e. the line for non-Asians) it is apparent that turnout declines as the density

⁶ The standard fragmentation index formula used is

$$D = 1 - \sum_{i=1}^n P_i^2$$

where P is the proportion in each ethno-religious group. Because the sum of P_i across all groups is constrained to 1, the sum of P_i^2 is at its maximum if the entire population is from the same group, giving a D of zero (homogeneous). As the number and size of groups, P_i gets smaller and D tends towards 1 (more fragmented).

⁷ The turnout rate for South Asian women was 64.6% compared to 58.2% for South Asian men. For more details, see Cutts et al. (2007).

Table 1
Bivariate correlations between turnout and area density and diversity indicators

	Non-Asian turnout (%)	Sikh turnout (%)	Hindu turnout (%)	Muslim turnout (%)
Census output area				
Ethnic diversity	-0.204	0.099	0.027	0.029
% Hindu	0.071	0.153	0.145	0.020
% Sikh	0.036	0.123	0.073	0.034
% Muslim	-0.208	0.040	0.017	0.166
Wards				
Ethnic diversity	-0.199	0.106	0.166	0.185
% Hindu	-0.113	0.071	0.316	0.027
% Sikh	-0.108	0.268	0.087	0.022
% Muslim	-0.206	0.032	0.060	0.399

Notes. Sample output areas (OAs) N: Sikh = 1317 OAs; Hindu = 1771 OAs; Muslim = 2126 OAs; non-Asians = 3173 OAs. Bold denotes statistical significance at $p = 0.05$.

increases, areas with more than 40% Muslim having 11% lower turnout amongst non-Asians than areas with less than 2%. Yet for the Muslim electorate, there is a clear upward trend in turnout as Muslim density increases, with a gap of nearly 20% points (in the opposite direction) between the least and most Muslim areas. Thus it would seem the high turnout rate in OAs with more than 40% Muslims is being driven by the Muslims, not by the remainder of the population. In other words Muslim turnout is boosting overall levels of turnout in predominantly Muslim areas. The overall pattern is in keeping with other aggregate analyzes which, notwithstanding the ecological fallacy (Robinson, 1950), have often pointed to this type of evidence as indicating low levels of turnout amongst minority groups. We repeated these charts for other Asian groups and found exactly the same pattern: invariably there is a clear positive linear relationship between the percent Asian in the OA and the turnout of Asians. Here is some preliminary evidence that, at the OA level at least, Asian participation in elections is more widespread in areas of high density.

Fig. 2 shows the pattern of turnout for Asians and non-Asians by the level of ethno-religious diversity in the OA. As for density, non-Asian turnout is progressively lower as the diversity of the OA increases (numbers nearer 1.0 being most diverse, near zero being homogeneous). By

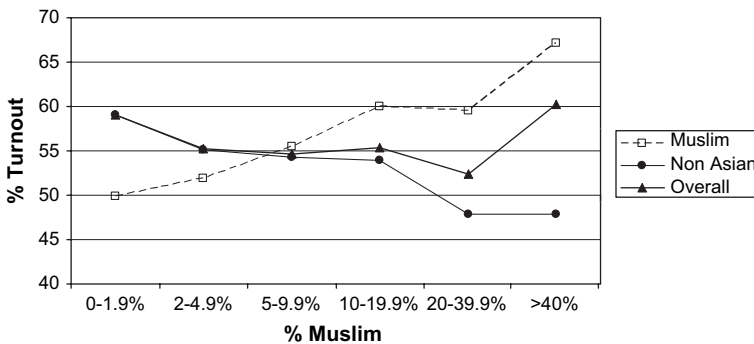


Fig. 1. Percentage Muslim in the OA by percentage turnout (weighted) of Muslims, non-Asians and overall (design and vote weight $V_{gweight}$).

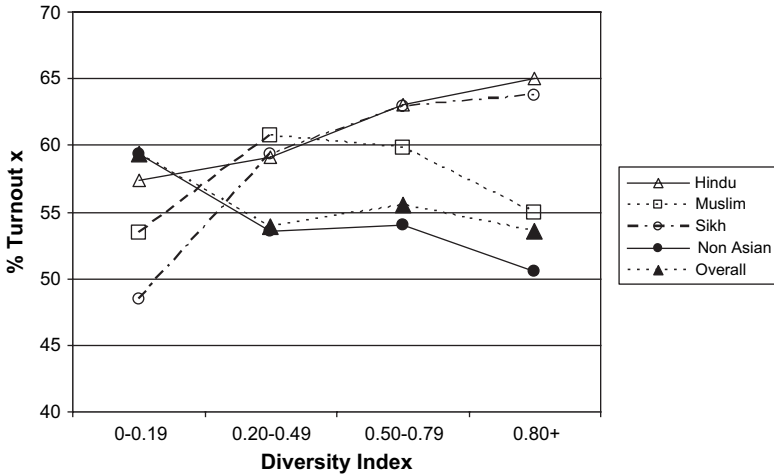


Fig. 2. Diversity in the OA by percentage turnout (weighted) of Hindu, Muslim, Sikh, non-Asian and overall (design and vote weight V_{weight}).

contrast Hindu and Sikh turnout increases as the level of diversity increases, though the pattern is more complex for Muslims for whom middling levels of diversity are associated with higher turnout, with lowers at both ends of the distribution. This may be due to the strong relationship of Muslim turnout with density, coupled with the fact that the least and most diverse areas have lower proportions of Muslims.

Table 1 also showed the correlations at the level of the electoral ward. These are the primary sampling units, which typically contain between five and 10,000 electors. Whilst they are larger than OAs (and our other units) and therefore likely to be more socially heterogeneous there is a significant degree of variation in their ethno-religious composition. For example, the percent Asian varies from zero to nearly 80% (Crown Hills ward in Leicester South constituency contains 76.6% Asian population). The correlations at ward level are similar to those at the OA level, with a positive correlation between both density and diversity and the turnout of Asian electors; and negative for non-Asian electors. If anything the relationship is slightly stronger than the equivalent for the smaller geographical units. Graphs of these relationships at ward level show a remarkably similar pattern to those at the OA and are therefore not replicated here.

Similarly, although Census data are not available for our other two levels of geography (the street and the polling district) for both we can classify density by the percent Asian using the characteristics of our own sample (derived from NP/Sangra). Fig. 3 examines the pattern at the street level. This, as far as we are aware, is novel in the analysis of turnout, largely because the availability of all electors within the same street (as we have here) is rarely available. The graph shows that, as for the OA and ward levels, non-Asian turnout declines as the Asian density increases, whilst the opposite is true for each of the Asian groups in the analysis. Indeed, the difference in turnout between low density areas (less than 5%) and high density streets (40%+) is as much as 21% points for Sikhs, 14% points for Muslims and 11% points for Hindus. The pattern for polling districts (the geographical unit designed for the administration of elections) is almost identical. Here is some further evidence that Asian participation in elections is more widespread in areas of high density.

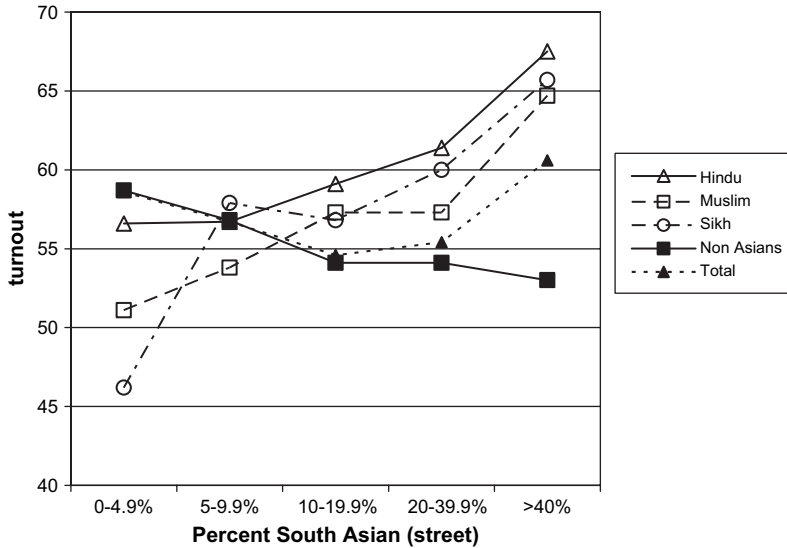


Fig. 3. Percentage turnout (weighted) by religion and % South Asian in Street.

Multivariate analyses

Modelling approach

We have found clear and consistent evidence that, whatever the level of geography, Asian turnout increases as the proportion of the electorate who are Asian increases, whilst turnout of the rest of the population decreases. This pattern is also apparent, but perhaps weaker, for diversity. However, from the evidence presented so far we cannot rule out the possibility this is just a reflection of the social or demographic characteristics of the Asian and non-Asian population of those areas. Geographers have regularly differentiated between the role of contextual and compositional effects on political behaviour (Agnew, 1987; Cox, 1969). This distinction is useful here as we are interested in differentiating between the uneven distribution of socio-economic attributes and place based or contextual characteristics which are associated with different outcomes for otherwise similar people but living in different types of locality. From the compositional perspective (where the locality is simply the sum of its constituent parts) different ethno-religious groups would vote in similar proportions wherever they lived, depending on their socio-economic characteristics. It is therefore important to take into account factors that affect Asian participation that may vary geographically such as the level of affluence or poverty. However, we are primarily interested in contextual effects, such as the competitiveness of the seat, and in particular whether living in more diverse areas and amongst others of a similar ethno-religious background, has an additional impact, independent of the socio-economic or demographic composition. In the remainder of this paper we attempt to allow for this by fitting multivariate models of voter turnout which control for the relevant characteristics of the population.

As explained above, our sample is heavily clustered in the 97 PSUs. Consequently we need to take this clustering into account when we estimate our models, particularly the standard

errors, as these are affected by the sample design. We also have good reason to believe that the outcome variable (whether somebody voted) is correlated within clusters: in other words people living in the same location are relatively similar in their propensity to vote in comparison with persons living elsewhere. For these reasons, and also because we are interested in the extent for variation within and between areas, the most appropriate modelling strategy is to use multilevel models. Multilevel models are appropriate for analysis of complex sample designs as they allow the estimation of robust standard errors, allowing for clustering in the sample. They also allow us to explicitly measure within and between area variation. As explained above, our sample contains a natural hierarchy suited to a multilevel approach. Individual electors are sampled in households, which are found within streets,⁸ which nest within OAs, within electoral wards. The polling district represents another potential level but overlaps with OA (i.e. is not nested). We therefore have potentially up to six levels, though in practice some of the levels are redundant as there is no significant variation at some levels once variation at other levels has been accounted for (Tranmer & Steel, 2001). The levels which prove to be most important, and which we use in all the models reported here are the individual elector, the household,⁹ the OA (or neighbourhood) and the electoral ward. Although in simple two level models there is significant between-unit variance in both streets and polling districts, this disappears once OA level is entered as a level. As noted above, this also has the additional advantage that we are able to draw on Census data for the two higher level units as both are standard output geographies. We are therefore able to include measures of diversity and density and social structure based on Census statistics, the most widely accepted source of these types of data.

In order to allow full flexibility, that is different variances, different coefficients and different levels of turnout; we fit separate models for each religion group. At the household level we control for the size and ethno-religious composition of the household in which the elector lives. The reference category is the most common – two electors homogeneous household (homogeneous households are all those, i.e. where each elector is from the same ethno-religious subgroup). For example, in the Sikh model a ‘five or more homogeneous household’ would contain at least five electors, all Sikh. Our key variables for testing our hypothesis are the three density indicators (the percent belonging to the ethno-religious grouping in the OA) and diversity as defined above. We also control for the socio-economic and demographic characteristics of electors by including a series of other OA level indicators generated from a principal components analysis of the OAs in our sample. OA level variables were used because OAs are small and relatively socially homogeneous (Martin, 2002), and there is a large selection of Census tables available at this level of geography. We decided not to include equivalent measures at the ward level (for which data are also available) due to collinearity.¹⁰ Eleven indicators

⁸ Streets are treated as nested within Census OAs because we are interested in street at the very local level. In fact some long streets will cut through a number of OAs, but in where this happens they are treated as separate streets.

⁹ Although household variation is not the subject of our hypotheses nor, therefore, the following discussion, it is important to take household clustering into account as the household has been shown to be an important source of variation in voting (e.g. Johnston et al., 2005). Indeed in the models presented below there is significant variation at the household level.

¹⁰ We do not use religion specific socio-economic variables because of small numbers for each cell at the OA level of geography. The inclusion of ward level Census information leads to non-convergence due to collinearity with Census information at lower levels of geography.

Table 2
Overall profile of output areas – principal components analysis solution

	C1 'Working class'	C2 'Affluence'	C3 'Students and young voters'	C4 'Retirement'
NS-SEC 6 and 7 (%)	0.88			
Degrees (%)	−0.81			
Manufacturing (%)	0.78			
NS-SEC 1 and 2 (%)	−0.78	0.42		
Two cars (%)		0.85		
Unemployed (%)		−0.77		
Owner occupiers (%)		0.88		
Long term ill (%)				0.86
Full-time students (%)			0.96	
Retired (%)				0.90
Electors under 25 (%)			0.91	
Accumulated value – % total variance	33.83	58.57	72.43	82.05

Notes. All variables relate to population of output areas, using data from 2001 Census. NS-SEC 6 and 7 are semi-routine and routine occupations; and NS-SEC 1 and 2 are managerial and professional occupations. Components with eigenvalues > 1 are retained. Rotated component loadings (varimax rotation) greater than 0.3 are shown. All cases are included in regression analyses.

were selected and four components were required to reproduce 82% of the original variance (see Table 2). The four components may be best described as 'working class', 'affluence', 'students and young people' and 'retirement'. Political variables vary only at the ward level and relate to the marginality and the candidate ethnicity of candidates in the *constituency* in which the ward is located. Asian candidate is a binary variable indicating whether any of the parties fielded an Asian candidate.¹¹

The multilevel logistic model is fitted using MLwiN with the estimates for the model derived using a Markov Chain Monte Carlo (MCMC) estimation procedure (Browne, 2002; Rasbash et al., 2000).¹² The estimates in Table 3 are based on the mean of the simulated values and the standard error is the standard deviation of the converged distribution. These estimates correspond to the traditional maximum likelihood estimate and its standard error. We use the Deviance Information Criterion (DIC) to evaluate the goodness of fit of the models (van der Linde,

¹¹ This information is obtained from the 2005 British Representation Study.

¹² It is common to estimate multilevel models using estimation methods based on marginal quasi-likelihood (MQL) or penalised (predictive) quasi-likelihood (PQL) procedures. Yet when fitting binary response models, both these quasi-likelihood estimators lead to an underestimation of the random effects or variance parameters, particularly when they are large and there are small numbers of observations within higher level units (Browne, Subramanian, Jones, & Goldstein, 2005; Goldstein & Rasbash, 1996; Rodriguez & Goldman, 1995). This is particularly relevant for individuals in households; given that the latter often contains relatively few individuals (particularly when one considers those electors eligible to vote), and between-household effects often tend to be fairly large. While the PQL estimation is also less biased than the MQL method for the fixed effects (Goldstein & Rasbash, 1996), recent evidence suggests that the Bayesian estimation procedure (MCMC method with diffuse priors) is less biased than either of the quasi-likelihood methods for binary response models (Browne et al., 2005). Here we used MLwiN software to estimate the starting values using first order PQL, then 5000 runs to derive the desired proposal distribution (discarded after convergence of the 'burn in' period) followed by 100,000 simulated random draws to obtain the final estimates. We use the Metropolis–Hastings algorithm and the default diffuse gamma priors for variance parameters.

Table 3
MCMC estimates of four-level logistic model of turnout in 2001 (standardised coefficients)

Variable	Non-Asian	Sikh	Hindu	Muslim
Fixed part				
Density				
% Muslim in an output area	—	—	—	0.23
% Hindu in an output area	—	—	0.13	—
% Sikh in an output area	—	0.13	—	—
Diversity				
Ethnic fragmentation index	−0.01	0.14	0.08	0.04
Household type and size				
Homogeneous household (two people) — base category				
Single person household	−0.18	−0.15	−0.16	−0.15
Three and four people homogenous household	−0.19	−0.02	−0.03	−0.03
Five or more homogenous household	−0.21	−0.09	−0.05	−0.08
Two people mixed household	−0.00	−0.01	−0.02	−0.06
Three and four people mixed household	−0.04	−0.05	−0.06	−0.09
Five or more person mixed household	−0.09	−0.06	−0.09	−0.09
Social and economic components				
Factor 1: working class	−0.15	0.07	0.14	0.13
Factor 2: affluence	0.31	0.08	0.04	0.05
Factor 3: students and young people	−0.09	−0.07	−0.08	−0.07
Factor 4: retirement	0.11	0.01	0.03	0.05
Political variables				
Margin 1997	−0.10	−0.10	−0.08	−0.07
Asian candidate	−0.00	0.03	0.01	−0.06
Random parts				
Between-ward variance	0.137	0.113	0.184	0.163
Between-output area variance	0.227	0.105	0.091	0.116
Between-household variance	8.125	4.810	4.964	5.140
<i>Bayesian Deviance Information Criteria (DIC)</i>	47,717.77	17,904.94	27,790.89	55,510.65
<i>Sample size</i>	46,605	16,697	26,317	52,490

Note. Bold denotes statistical significance at $p = 0.05$. A constant was also included in the model.

2005; Spiegelhalter, Best, & van der Linde, 2002). The DIC statistic accounts for the number of parameters in the model, consequently a small difference in DIC between the variance components' models and the models which include the random and fixed effects would suggest little improvement. A larger DIC in the random and fixed effects' models would indicate a worse performance.¹³ Following the introduction of fixed effects, there was reduction in the DIC coefficient for all our models shown in Table 3.¹⁴

¹³ Generally, a difference of less than 2 between models suggest no difference, while a difference of 10 or above indicates an improvement in goodness of fit (Burnham & Anderson, 2002).

¹⁴ The DIC coefficients for the variance components' models are available on request from the authors. We actually examined the DIC coefficients for various stages of the multilevel model (random effects only) and found that introduction of variation within households resulted in the largest reduction of the DIC coefficient.

Model results: the random effects

The standardised coefficients¹⁵ from the four different MCMC multilevel regression models, including all covariates, are reported in Table 3. The standardised coefficients allow us to test the relative importance of different variables in influencing turnout. Density is only included for the specific group being modelled, whilst diversity is included for all models (alternative models are discussed below). We also fitted variance components' models (with no covariates) in order to generate estimates of variance at the different levels before controlling for covariates. These are alluded to in the following discussion and are available from the authors on request.

As regards the random effects, the variance components' model confirmed that there was significant variation at each of the three higher levels, before controlling for covariates. This was true for all of the ethno-religious subgroups. The most important level for all groups (by some way) was the household, though the other levels (OA and ward) also showed substantial degrees of variation indicating a multilevel approach was necessary. The random effects reported in Table 3 refer to these variance components after controlling for covariates. These are somewhat reduced compared to the VC models, since the covariates account for much of the variation in turnout between geographical areas. Nevertheless, the random effects are still significant in these models, indicating that not all the variation can be attributed to social and political characteristics. The exception is that there is no significant variation at OA level the Sikh model once social and political factors are taken into account. The key issue is that between and within area and household variation does exist for all groups, and that to some extent this is attributable to the characteristics of areas. However, in this paper we are more concerned with the fixed effects, in particular the role of the neighbourhood diversity and density.

Model results: the fixed effects

Turning to the fixed effects for the non-Asian model, we see that diversity has no significant impact on turnout once other social and political variables are taken into account. Thus, although we saw a significant negative relationship in the bivariate relationship, this is attributable to other social characteristics of the neighbourhood (OA). This is in keeping with other research which shows similar patterns with respect to generalised trust amongst non-minority populations in heterogeneous areas (Oliver & Mendleberg, 2000). The composition of the household was also significant, with all types of multiple elector households having lower turnout than two-person households. All four of the OA social indicators are significant and in the direction expected. Areas with large numbers of students and young people and a working-class profile display lower turnout rates. Affluent and retirement areas tend to have higher turnout rates. The marginality of the constituency works in the way expected – people living in safer seats are less likely to vote. The presence of Asian candidates does not affect non-Asian turnout.

But what about Asian electors? Our first hypothesis stated that an increase in the proportion of electors of the same ethnic-religious origin would lead to an increase in turnout amongst electors of Asian origin. This is confirmed in Table 3 for each of the subgroups. First, the

¹⁵ Coefficients are standardised using the formula $b_s^* = (b)_{(sX)} / (\pi / \sqrt{3})$. This is used to standardise the predictors and the dependent variable, using $\pi / \sqrt{3} = 1.8$, the standard logistic distribution, as the estimate for the standard deviation of the dependent variable Y . This is the equivalent of standardising the predictors and leaving the dependent variable in its original metric (see Menard, 1995, 2004 for full details).

Table 4

Standardised coefficients for diversity and density indicators, and fit statistics for alternative models

	Sikh	Hindu	Muslim
Model 1: diversity			
Diversity	0.17	0.12	0.06
<i>Model fit</i>	17,907.88	27,798.97	55,551.70
<i>Change from null model</i>	125.28	137.80	286.92
Model 2: density			
% Sikh	0.17	–	–
% Hindu	–	0.15	–
% Muslim	–	–	0.23
<i>Model fit</i>	17,918.30	27,806.85	55,519.94
<i>Change from null model</i>	114.86	129.92	318.68
Model 3: diversity and density			
Diversity	0.14	0.08	0.04
% Sikh	0.13	–	–
% Hindu	–	0.13	–
% Muslim	–	–	0.23
<i>Model fit</i>	17,904.94	27,790.89	55,510.65
<i>Change from null model</i>	128.22	145.88	327.97

Note. Bold denotes statistical significance at $p = 0.05$.

greater the proportion of Sikh electors in the OA, the higher the probability of any Sikh elector voting. Effects of similar magnitudes are also estimated for Hindus, with the most powerful effect observed for Muslims. All are significant after controlling for other ward and OA characteristics. Diversity also makes an independent contribution to explaining Sikh and Hindu voting, with higher levels of diversity being linked to higher levels of turnout. As noted above, density and diversity variables are correlated¹⁶ but when both are included in the model, both appear significant and of similar impact (alternative models with only density and diversity are reported in Table 4 below). Notably both the diversity and density standardised coefficients are larger than those for any other variables in the Sikh and Hindu models, including all the social indicators. This implies the ethnic-composition is indeed a key factor affecting Sikh and Hindu turnout. For Muslims the density effect is even stronger – Muslims tend to vote more when they live amongst other Muslims – but the diversity effect is not significant. The density effect is by far the most important factor of all variables in the model effecting Muslim turnout.

With respect to the other covariates in the model, the patterns are broadly similar to those uncovered for the non-Asian electorate. In other words electors in two-person same-religion households are always most likely to turnout whilst those in larger mixed household are less likely to vote. Single elector household is also less likely to vote in all subgroups. The effect of other socio-economic factors on turnout is a little more mixed for Asian electors. For example, other things being equal, Asian electors in working-class areas have higher probabilities of turnout, suggesting the effects of class and ethnic concentration may be reinforcing, as both working-class populations and larger concentrations of Asians tend to be in inner city areas. In contrast the effects of ‘affluence’ (positive) and ‘students and young people’ (negative) are similar to those for the non-Asian population, whilst the effect for ‘retirement areas’ is only significant (and positive) for Muslims. Marginality is in direction expected for all groups, whilst Asian candidature has no discernible impact on Asian turnout.

¹⁶ Correlation between diversity and Sikh density = 0.313; and between diversity and Hindu density = 0.497.

Table 3 showed that density and diversity were particularly important for turnout for different Asian groups to varying degrees, but not for non-Asian turnout. We also noted that the effects were large compared to those of other socio-demographic and political variables. However, we also noted that density and diversity are correlated with each other and therefore to clarify the picture we tested alternative models of Asian turnout with density and diversity separately. Table 4 shows the standardised coefficients and the fit statistics for the alternate models (with other covariates as previously). The table shows that when density is excluded, diversity is significant and positive for each of the three groups. The magnitude is slightly greater for each (compared to the full model) but the fit of the model is worse. When density is included on its own, again the magnitude of effects is slightly greater for Hindu and Sikhs but unaffected for Muslims. Again the model is a worse fit for each group than the combined model. However, for Hindu and Sikhs the diversity only model fits better than density only with the reverse being true for Muslims. This finding and the relative magnitude of the effects imply that density is especially important for the Muslim community, but for Hindu and Sikhs, both diversity and density are important.

Conclusion

We have uncovered very clear and consistent evidence that there is a strong and positive link between the ethno-religious composition of the area and the turnout of both the minority and majority groups. For density, the simple bivariate relationships were pretty convincing: no matter what geographical level of analysis we chose to look at, the same pattern was found. As the Asian population density increases so to does their turnout. However, at the same time that of their (non-Asian) neighbours decreased. In other words, and what is particularly interesting, is that the pattern for Asians is the exact opposite of that for the rest of the population: being in an Asian areas seems to have a mobilising effect on the Asian population but has the opposite effect for the rest of the population. This is precisely the same relationship found by Fieldhouse and Cutts (2007) which looked at the impact of ethno-religious composition on registration, suggesting this effect is not narrowly limited to turnout.

For diversity the effects are more mixed. The bivariate relationships showed that the overall negative effect of diversity on participation is certainly absent for Hindus and Muslims and reversed (i.e. positive) for Sikhs. There are a number of possible explanations for this. One is that more diverse areas are relatively deprived and the general underlying pattern of turnout is low, but at the same time the mobilising forces of the Asian community (measured by density) are boosting participation in the Asian community. This interpretation is supported by fact that diversity does not have a significant effect on non-Asian turnout after controlling for the social characteristics of the areas in which people live, whilst it is positive for both Hindus and Sikhs. Density by contrast was significant and positive for each of the South groups, especially for Muslims, even after controlling for other factors. Indeed density and diversity were by far the most important predictors of Asian turnout in all the models. These findings are consistent with Marschall and Stolle (2004) who, in respect to generalised trust, found trust amongst whites to be related to neighbourhood social status, but for blacks was positively related to diversity.

The implications of these findings are important. Diversity is not damaging levels of participation, even amongst the majority population, and indeed is associated with higher participation in the minority population. Furthermore, the mobilising effect of living amongst people of a similar ethno-religious background has an enhancing effect on the participation of minority

groups, especially Muslims. The relative importance of this effect for Muslims is likely to be to with the greater degree of social and geographical separation of Muslim communities, compared to Hindus or Sikhs. However, our findings are also generally consistent with the argument that more dispersed minority groups are less likely to participate (Huckfeldt, 1986; Leighley & Vedlitz, 1999). A second interesting implication of the divergent relationships between turnout and participation for the Asian minority and the majority group is that if data are not disaggregated, the counter-trend that exists for the minority group will be obscured by the numerically more important effect for the majority of the population. If the overall aggregated data are used to infer about the turnout of the minority group, a classic ecological fallacy may arise, giving the impression of lower turnout amongst minorities than is actually the case (Robinson, 1950).

The purpose of our analysis has been to establish the relationship between the ethno-religious composition of areas and the turnout of electors from different ethnic-religious sections of the electorate at a number of different scales. All our results upheld the ‘mobilisation’ hypotheses (H1) rather than supporting the marginalisation thesis (H2 and H3). That is Asians living in more diverse areas and those with substantial populations sharing the same ethno-religious origins are *more* likely to vote than those living outside of these areas. Furthermore, this relationship is robust after controlling for key socio-economic, demographic and political characteristics of areas. However, whilst establishing a clear and consistent relationship between local ethno-religious composition and turnout at various scales, this does not tell us why those relationships should exist. Earlier we presented a number of different explanations as to why they might exist. For example, areas with larger minority communities may have more extensive community networks (at least for members of those groups); higher levels of social capital; a more developed sense of ‘ethnic community’ or consciousness; and enhanced mobilising forces of local religious or ethnically specific institutions or organisations. Further research should focus on the relative strength of these explanations. Nonetheless the findings presented here will resonate with those debating the relationship between multiculturalism and integration. Consistent with previous work on electoral registration (Fieldhouse & Cutts, 2008) our findings clearly demonstrate an un-anticipated benefit of the geographical concentration of minority groups: that is a considerable boost to electoral turnout in areas which might otherwise be suffering from much lower levels of participation.

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References

- Agnew, J. (1987). *Place and politics: The geographical mediation of state and society*. Boston: Allen and Unwin.
- Alesina, A., & La Ferrara, E. (August 2000). Participation in heterogeneous communities. *The Quarterly Journal of Economics*, 847–904.
- Alesina, A., & La Ferrara, E. (2002). Who trusts others? *Journal of Public Economics*, 85, 207–234.
- Ali, A., & Percival, G. (1993). *Race and representation: Ethnic minorities and the 1992 elections*. London: Commission for Racial Equality.
- Amin, A. (2002). Ethnicity and the multicultural city: living with diversity. *Environment and Planning A*, 34, 959–980.
- Anwar, M. (1990). Ethnic minorities and the electoral process: some recent developments. In H. Goulbourne (Ed.), *Black politics in Britain*. UK: Gower Publishing Company.

- Anwar, M. (2001). The participation of ethnic minorities in British politics. *Journal of Ethnic and Migration Studies*, 27(3), 533–549.
- Blalock, H. M., Jr. (1967). *Toward a theory of minority-group relations*. New York: Wiley and Sons.
- Browne, W. (2002). *MCMC estimation in MLwiN*. London: London Institute of Education.
- Browne, W., Subramanian, S., Jones, K., & Goldstein, H. (2005). Variance partitioning in multilevel logistic models that exhibit overdispersion. *Journal of the Royal Statistical Society, Series A*, 168(3), 599–613.
- Burnham, K., & Anderson, D. (2002). *Model selection and multimodel inference: A practical—theoretical approach* (2nd ed.). New York: Springer.
- Cohen, C. J., & Dawson, M. C. (1993). Neighbourhood poverty and African American politics. *American Political Science Review*, 87, 286–302.
- Commission on Integration and Cohesion. (2007). *Our shared future: The final report of the commission on integration and cohesion*. London.
- Costa, D. L., & Kahn, M. E. (2003). Civic engagement and community heterogeneity: an economist's. *Perspectives on Politics*, 1(1), 103–111.
- Cox, K. R. (1969). The voting decision in a spatial context. *Progress in Geography*, 1, 81–117.
- Cutts, D., Fieldhouse, E., Purdam, K., Steel, D., & Tranmer, M. (2007). Voter turnout in British South Asian communities at the 2001 general election. *British Journal of Politics and International Relations*, 9(3), 396–412.
- Dahl, R. (1961). *Who governs?* New Haven: Yale University Press.
- Fieldhouse, E., & Cutts, D. (2007). *Electoral participation in Britain's South Asian communities*. York: Joseph Rowntree Foundation.
- Fieldhouse, E., & Cutts, D. (2008). Mobilisation or marginalisation? Neighbourhood effects on muslim electoral registration in Britain in 2001. *Political Studies*, 56(2), 333–354.
- Giles, M. W., & Evans, A. S. (1985). External threat, perceived threat and group identity. *Social Science Quarterly*, 66(1), 50–66.
- Goldstein, H., & Rasbash, J. (1996). Improved approximations for multilevel models with binary responses. *Journal of the Royal Statistical Society, Series A*, 159(3), 505–513.
- Guttorf, T. M., & London, B. (1983). Race, political orientation, and participation: an empirical test of four competing theories. *American Sociological Review*, 48(4), 439–453.
- Hero, R. E. (1998). *Faces of inequality: Social diversity in American politics*. New York: Oxford University Press.
- Hero, R. E., & Tolbert, C. (2007). Voter turnout and other participation. In R. Hero (Ed.), *Racial diversity and social capital*. New York: Cambridge University Press.
- Hill, K., & Leighley, J. (1999). Racial diversity, voter turnout and mobilizing institutions in the United States. *American Politics Quarterly*, 27(3), 275–295.
- Home Office. (2005). *Diversity, trust and community participation in England*. London: Home Office.
- Huckfeldt, R. (1986). *Politics in context: Assimilation and conflict in urban neighbourhoods*. New York: Agathon.
- Johnston, R., Jones, K., Propper, C., Sarker, R., Burgess, S., & Bolster, A. (2005). A missing level in the analyses of British voting behaviour: the household as context as shown by analyses of a 1992–1997 longitudinal survey. *Electoral Studies*, 24, 201–225.
- Key, V. O., Jr. (1949). *Southern politics — In state and nation*. Knoxville: University of Tennessee Press.
- Kohfeld, C. W., & Sprague, J. (2002). Race space and turnout. *Political Geography*, 21, 175–193.
- Kundnani, A. (2001). From Oldham to Bradford: the violence of the violated. *Race and Class*, 43(2), 105–131.
- Laurence, J., & Heath, A. (2008). Predictors of community cohesion: multi-level modeling of the 2005 citizenship survey.
- Leighley, J., & Vedlitz, A. (1999). Race, ethnicity and political participation: competing models and contrasting explanations. *Journal of Politics*, 61(4), 1092–1114.
- Letki, N. (2008). Does diversity erode social cohesion? Social capital and race in British neighbourhoods. *Political Studies*, 56(1), 99–126.
- Lien, P.-T. (1994). Ethnicity and political participation: a comparison between Asian and Mexican Americans. *Political Behavior*, 16(2), 237–264.
- van der Linde, A. (2005). DIC in variable selection. *Statistica Neerlandica*, 59, 45–56.
- Lipset, S. M., Lazarsfeld, P. F., Barton, A. H., & Linz, J. (1954). The psychology of voting: an analysis of political behavior. In G. Lindzey (Ed.), *Handbook of social psychology* (pp. 1124–1175). Cambridge, MA: Addison-Wesley.
- Marschall, M., & Stolle, D. (2004). Race and the city: neighbourhood context and the development of generalised trust. *Political Behavior*, 26(2), 125–153.
- Martin, D. (2002). Output areas for 2001. Chapter 3. In P. Rees, D. Martin, & P. Williamson (Eds.), *The census data system* (pp. 37–46). Chichester: John Wiley & Sons.

- Massey, D., & Denton, N. (1989). Hypersegregation in U.S. metropolitan areas: black and Hispanic segregation along five dimensions. *Demography*, 26, 373–391.
- Massey, D., & Denton, N. (1993). *American apartheid: Segregation and the making of the underclass*. Cambridge, MA: Harvard University Press.
- Mathews, D. R., & Prothro, J. W. (1966). *Negroes and new southern politics*. New York: Harcourt, Brace and World.
- Menard, S. (1995). *Applied logistic regression analysis*. Thousand Oaks, CA: Sage.
- Menard, S. (August 2004). Six approaches to calculating standardized logistic regression coefficients. *The American Statistician*, 58(3), 218–223.
- Miller, A., Gurin, P., Gurin, G., & Malanchuk, O. (1981). Group consciousness and political participation. *American Journal of Political Science*, 25, 494–511.
- Oliver, E. (1999). The effects of metropolitan economic segregation on local civic participation. *American Journal of Political Science*, 43, 186–212.
- Oliver, E. (2000). *Civic capacity and the authentic governance principle: Understanding social contexts and citizenship participation in Metropolitan America*. Conference on democracy. Princeton University.
- Oliver, E. (2001). *Democracy in suburbia*. Princeton: Princeton University Press.
- Oliver, E., & Mendleberg, T. (2000). Reconsidering the environmental determinants of racial attitudes. *American Journal of Political Science*, 94(2), 361–374.
- Olsen, M. (1970). Social and political participation of blacks. *American Sociological Review*, 35, 682–696.
- Peach, C. (July 2006). Muslims in the 2001 census of England and Wales: gender and economic disadvantage. *Ethnic and Racial Studies*, 29(4), 629–655.
- Pelissero, J. P., Krebs, T. B., & Jenkins, S. (2000). Asian Americans, political organizations and participation in Chicago electoral precincts. *Urban Affairs Review*, 35(6), 750–769.
- Phillips, D. (1998). Black minority ethnic concentration, segregation and dispersal in Britain. *Urban Studies*, 35(10), 1681–1702.
- Purdam, K., Fieldhouse, E., Russell, A., & Kalra, V. (2002). *Voter engagement among black and minority ethnic communities*. London: Electoral Commission.
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. New York, NY: Simon and Schuster.
- Putnam, R. D. E Pluribus Unum: civic engagement in a diverse and changing society. *Scandinavian Political Studies*, 30(2), in press.
- Rasbash, J., Browne, W., Goldstein, H., Yang, M., Plewis, I., Healy, M., et al. (2000). *A user's guide to MLwiN* (2nd ed.). London: Institute of Education.
- Robinson, V. (1986). *Transients, settlers and refugees*. Oxford: Clarendon Press.
- Robinson, W. S. (1950). Ecological correlations and the behaviour of individuals. *American Sociological Review*, 15, 351–357.
- Rodriguez, G., & Goldman, N. (1995). An assessment of estimation procedures for multilevel models with binary responses. *Journal of the Royal Statistical Society, Series A*, 158, 78–89.
- Rosenstone, S., & Hansen, J. (1993). *Mobilisation, participation and democracy in America*. New York: Macmillan.
- Saggar, S. (1998). *The general election 1997: Ethnic minorities and electoral politics*. London: Commission for Racial Equality.
- Schlichting, K., Tuckel, P., & Maisel, R. (1998). Racial segregation and voter turnout in America. *American Politics Quarterly*, 26(2), 218–236.
- Shingles, R. D. (1981). Black consciousness and political participation: the missing link. *American Political Science Review*, 75(1), 76–91.
- Southwell, P., & Pirsch, K. (2003). Political cynicism and the mobilisation of black voters. *Social Science Quarterly*, 84(4), 906–917.
- Spiegelhalter, D., Best, N., & van der Linde, A. (2002). Bayesian models of complexity and fit. *Journal of the Royal Statistical Society, Series B*, 64, 583–639.
- Tranmer, M., & Steel, D. (2001). Ignoring a level in a multi-level model: evidence from UK census data. *Environment and Planning A*, 33, 941–948.
- Uhlaner, C. J., Cain, B. E., & Kiewiet, D. R. (1989). Political participation of ethnic minorities in the 1980s. *Political Behavior*, 11(3), 195–231.
- Verba, S., & Nie, N. H. (1972). *Participation in America: Political democracy and social equality*. New York: Harper and Row.
- Verba, S., Schlozman, K. L., & Brady, H. (1995). *Voice and equality: Civil voluntarism in American politics*. Cambridge, MA: Harvard University Press.
- Verba, S., Schlozman, K. L., Brady, H., & Nie, N. H. (1993). Race, ethnicity and political resources: participation in the United States. *British Journal of Political Science*, 23(4), 453–497.
- Wolfinger, R. E. (1965). The development and persistence of ethnic voting. *American Political Science Review*, 59, 896–908.