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Ethno-religious categories and measuring occupational attainment in relation to education in England and Wales: a multilevel analysis

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Abstract. It has been suggested that 'ethnic penalties' exist in British labour markets, whereby members of ethnic minority groups fail to get into occupations commensurate with their qualifications. Often these analyses of occupational attainment by education treat minority groups as homogeneous, not recognising that in several there is substantial heterogeneity on other criteria, such as religion, which may also influence occupational attainment. We argue that there are significant variations among these ethno-religious minorities regarding their labour-market performance, which is measured using a continuous scale of skill-level distances—a measure of returns to education.

Much has been written about the experiences of recent immigrant groups to Britain and their descendants and of the implications these raise for a multicultural society. Many of these discussions—especially in the popular press and political debate—use relatively vague terms to describe those groups. In some situations, ethnic background is used as the defining criterion—perhaps based on ethno-national and geographical concepts (as with contrasts among Indians, Pakistanis, and Bangladeshis,[1] for example)—whereas in others, geography is combined with race (as with discussions of Black Africans and Black Caribbeans). Religion is sometimes the focus, however, with a particular recent focus on Muslim groups (Lindley, 2002; Peach, 2006a).

Many studies have explored intergroup differences within British society, in diverse fields including labour-market experience. Heath and McMahon (1997, page 646), among others, identified "some sort of ethnic penalty" operating, whereby members of particular groups are disadvantaged (if not discriminated against) according to their ethnicity even when their educational qualifications are taken into account. Ethnic minorities do not necessarily have lower qualification levels (Lindley, 2007); some perform well in the educational system but are unable to obtain employment commensurate with those qualifications (Modood, 2005).

To evaluate arguments regarding 'ethnic penalties', it is necessary not only to construct rigorous tests to assess whether members of certain groups suffer any penalty but also to ensure that the groups studied are sensibly defined. Such investigations almost invariably rely upon official data and ethnic classifications in the UK [see Dixie (1998); for critiques, see Ballard (1996; 1998)]. The current classification of sixteen categories (table 1) has evolved over two or more decades (see, for example, Sillitoe and White, 1992).

[1] Although, of course, many of the Bangladeshis now in the UK were born in what was then East Pakistan (Dench et al, 2006).

Table 1. The sixteen-fold classification of ethnic groups used in reporting the 2001 Census of England and Wales.

White British	White – Irish	White – Other
Mixed White – Black Caribbean		
Mixed White – Black African		
Mixed White – Asian	Mixed White – Other	
Indian	Pakistani	Bangladeshi
Other Asian		
Black Caribbean	Black African	Black Other
Chinese		Other

Apart from the Whites [with the Irish separately identified within this category after considerable debate and pressure (Howard, 2006; Walter, 1998)], it focuses almost entirely on two groups defined largely by geography and colour—Black Africans and Black Caribbeans; Asians subdivided by country of origin (India, Pakistan, Bangladesh)—plus a general racial category (Chinese). In the 2001 Census, four 'mixed' categories were introduced (Aspinall, 2000a).

The official definition of ethnicity used by the Office for National Statistics in Britain is therefore largely based on racial characteristics and place of birth/family origin. Walter (1998) characterises this as a black – white binary, while Berthoud (1998, page 54) delineates the role of heritage in this regard. He also argues that ethnicity is a "multi-faceted phenomenon based on some or all of several possible ingredients: physical appearance, subjective identification, cultural and religious affiliation, stereotyping and social exclusion." The need to recognise these various ingredients in data collection has long been debated, and a religious question is now included in the census for all parts of the UK (Aspinall, 2000b). However, most discussions of ethnicity still rely on the sixteen categories produced from the self-identification ethnicity question.

A census can be presented as "simply a pragmatically-designed instrument for collecting policy-relevant statistical data" (Walter, 1998, page 74) and its categories become extremely important in the direction of public debate and policy. The creation and use of census categories is thus a highly political process, with important implications (Kertzer and Arel, 2002, page 3). Censuses strongly influence the content of racial discourse in a country (Nobles, 2002) as well as the direction of (evidence-based) public policies, so that representation in the census is important for groups who wish to be the focus of such policies, and the inclusion of relevant questions can be politically contested [for the US case, see Robbin (1999; 2000a; 2000b) and Skerry (2000)]. In an 'interest-group society', minority groups who want special treatment must ensure that they are represented in that society's major data collections [see Anderson and Fienberg (1999), and also Robbin (2001, page 341), who claims that "Conflict over the census cannot be separated from opposition to affirmative action and other policies that create entitlements based on race, nor from public perception that the counts produced by the census are synonymous with political power"]. Ethnic groups also have a defined position within British society (the Race Relations Act 1976, amended in 2000, and the Commission for Racial Equality established under that act).[(2)] Within the political and public debate it is widely recognised that some of those groups have experienced disadvantage if not discrimination.

[(2)] In 2007 the Commission was incorporated within the Commission for Equality and Human Rights.

In this paper, to address the significance of defining appropriate minority groups, we propose new categories to reclassify diversity in the UK: we fine tune the definition of the minority groups in an 'interest-group society' while necessarily remaining reliant on the Census data. Rather than relying on self-reported ethnicity alone—as is the case in most other studies—we combine the responses to the 2001 Census questions on religion and ethnicity to look at differences within as well as between the groups usually analysed, using Indians as a case study of a multi-religion ethnic group and Muslims as a case study of a multi-ethnic religious group. Such analysis of the interaction of ethnicity and religion takes us beyond the existing literature.[3] We also introduce two variables (segregation and deprivation) to control for neighbourhood effects, based on the argument that spatial concentration into areas of deprivation and/or areas where migrant groups are residentially segregated tends to exacerbate disadvantages in the labour market relative to educational attainments. Secondly, we adopt a method of returns to education in the labour market through a quantitative scale which contrasts individuals' educational qualifications with their labour-market position in an attempt to improve the understanding of ethnic and religious differences in the labour market. [For similar models, see Alpin et al (1998), Green et al (1999), Groot and Maasen van den Brink (1997), Halaby (1994), Sloane et al (1999), and van Velden and van Smoorenburg (1997).]

Ethnicity and religion in England and Wales[4]

Table 2 cross-classifies individuals in the largest ethnic groups and religious-affiliation groups identified in the 2001 Census. Mixed and other heterogeneous ethnic groups (eg Black Other) are excluded from this table; undefined religious categories (ie 'Any Other Religion', 'No Religion' or 'Religion Not Stated') are grouped together.

Rows in the first block of table 2 show the percentages of the members of each ethnic group according to their religious affiliation. In three cases (White Irish, Pakistanis, and Bangladeshis), the great majority of the members of those ethnic groups is associated with a single religion; in three others (White British, Black Caribbean, and Black African) between two thirds and three quarters are associated with Christianity. Among Indians, a more varied distribution can be seen in terms of religious background [as also noted by Brown (2000), Heath and Yu (2005), and Lindley (2002)]. In the second block of table 2, the rows give the breakdown of religious categories by ethnicity. In most cases, the great majority of those associated with a particular religious group also share the same self-assessed ethnic identity. The main exception is the Muslim group which comprises a large Pakistani component plus significant numbers of Bangladeshis, Indians, Black Africans, and Others.

Treating a main ethnic or religious group as homogeneous is to oversimplify: there are important cross-cutting ethnic–religious cleavages which may have major cultural connotations important in appreciating some behavioural patterns. In his analysis of segregation in London, Peach (2006b) has shown that members of the various Muslim ethnic groups tend to live in separate areas, as do various religious groups within the Indian ethnic community. Other studies argue that treating Muslims as a single aggregate involves "capturing the characteristics of a heterogeneous group" (Peach, 2006a, page 653; see also ODPM, 2006). We elaborate such in-group diversity here.

[3] Two of the few other studies that look at the effect of ethnicity and religion are those of Brown (2000) and Lindley (2002).

[4] Because of different data-collection and data-collation procedures in Scotland and Northern Ireland, all of the discussion in this paper focuses on England and Wales alone.

Table 2. A cross-classification of religion and ethnicity in England and Wales, 2001.

Ethnicity	Religion							Total
	Christian	Buddhist	Hindu	Jewish	Muslim	Sikh	Other/ none	
Percentage of row totals								
White British	76.0	0.1	0.0	0.5	0.1	0.0	23.3	45 533 741
White Irish	85.4	0.2	0.0	0.2	0.2	0.0	14.0	641 804
White other	62.7	0.3	0.1	2.4	8.6	0.0	25.9	1 345 321
Indian	4.9	0.2	45.0	0.1	12.7	29.1	8.1	1 036 807
Pakistani	1.1	0.0	0.1	0.1	92.0	0.1	6.7	714 826
Bangladeshi	0.5	0.1	0.6	0.1	92.5	0.0	6.3	280 830
Other Asian	13.4	4.9	26.8	0.3	37.3	6.2	11.2	241 274
Chinese	21.6	15.1	0.1	0.1	0.3	0.0	62.8	226 948
Black Caribbean	73.8	0.2	0.3	0.1	0.8	0.0	24.9	563 843
Black African	68.9	0.1	0.2	0.1	20.0	0.1	10.7	479 665
Percentage of column totals								
White British	92.6	34.6	0.8	83.4	2.8	1.4	89.4	
White Irish	1.5	0.8	0.0	0.4	0.1	0.0	0.8	
White Other	2.3	3.1	0.0	12.4	7.5	0.2	2.9	
Indian	0.1	1.3	84.4	0.2	8.5	91.5	0.7	
Pakistani	0.0	0.1	0.1	0.1	42.5	0.1	0.4	
Bangladeshi	0.0	0.1	0.3	0.1	16.8	0.0	0.1	
Other Asian	0.1	8.1	11.7	0.3	5.8	4.6	0.2	
Chinese	0.1	23.8	0.1	0.0	0.1	0.0	1.2	
Black Caribbean	1.1	0.7	0.3	0.2	0.3	0.0	1.2	
Black African	0.9	0.2	0.0	0.1	6.2	0.1	0.4	
Total	37 338 486	144 453	552 421	259 927	1 546 626	329 358	11 870 645	

Measuring the skill-level distances: occupation versus qualification

In studying the occupational returns to education, we focus on the distance between skill levels required by current occupations and skills obtained through education—which was the major issue in a wider study (Khattab et al, 2006). In the transition between the two life-stages (ie school and work),[5] people seek employment opportunities that match their educational qualifications (Ainley et al, 1997; Halpern, 1985; Nielsen et al, 2003), and their subsequent careers are founded on those original qualifications.[6]

Considerable work has been undertaken on matching skills with employment opportunities, usually by comparing individuals' educational qualifications with the socioeconomic status of their first and subsequent occupations (as in Shavit et al, 1998). Some of those studies focusing on ethnic minority groups (Cheung and Heath, 2007; Heath and McMahon, 1997; 1999; 2005; Heath and Yu, 2005) have identified a number of factors influencing differences in the extent to which individuals realise their potential in the labour market, including educational qualifications (Heath and McMahon, 2005; Heath et al, 2000), generational differences (Platt, 2005),

[5] Ainley et al (1997, page 12) term it as "the period during which young people move from the principal activity being full-time schooling or its equivalent to that in which their principal activity is work."

[6] Some return to education (part-time if not full-time) at later stages of their careers, of course, whereas others obtain skills 'on the job'. In the data deployed here, it is not possible to take this postschool learning into account.

and differences between migration streams (Münz, 2004; Phalet and Andriessen, 2003). Some conclude that there are 'ethnic penalties' in the degree to which abilities and employment opportunities are matched (Berthoud, 2000; Carmichael and Woods, 2000; Gilborn and Mirza, 2000; Iganski and Payne, 1996; Modood, 2004; Owen, 2003; Richardson and Wood, 1999)—which may reflect racial and/or ethnic disadvantage, if not discrimination (Peach, 2005; Wrench and Solomos, 1993).

These studies find that, whereas some people obtain appointments that match their educational qualifications, others may be either overqualified (the posts they occupy are less than they might expect on the basis of their qualifications) or underqualified (they have obtained jobs which normally are only gained by those with 'better' qualifications). The overqualified apparently suffer from labour-market disadvantage whereas the underqualified are advantaged. Most of these conclusions are drawn from analyses of, for example, occupational attainment and the duration of postschool unemployment as indicators of labour-market performance, regressed not only against qualifications but also against personal and household characteristics, including ethnicity (eg Andrews et al, 2001; Borjas, 1992; 1995; Gang and Zimmermann, 2000; Heath and McMahon, 1997; Nielsen et al, 2003; Riphahn, 2002).

Following the pattern in earlier studies on returns to education measuring overqualification and underqualification (Alpin et al, 1998; Green et al, 1999; Groot and Maasen van den Brink, 1997; Halaby, 1994; Sloane et al, 1999; van Velden and van Smoorenburg, 1997), we use a method of quantifying the distance between skill levels gained in education and the skill levels required for occupations (Khattab et al, 2006; 2008). Instead of using single years spent in education converted from self-reported education levels (ie van Velden and van Smoorenburg, 1997), we use skill levels as identified in the census data. This provides an index of the degree of match/mismatch between individuals' potential and occupation by combining two variables obtained from the 2001 Census of England and Wales: level of *highest educational qualification* and *occupational level* (as defined by the International Standard Classification of Occupations—ISCO88).

The ten different occupational levels have been grouped into four categories based on required skill levels identified in ISCO88 (see Hoffmann and Scott, 1993). We have excluded several categories (ie 'others', 'armed forces', and 'unknown', as well as unemployed and inactive), and placed others into skill levels according to assumed educational requirements. Required educational levels for each have been identified using the 2001 UK Census classification of qualifications into five levels. The result is a fourfold categorisation both of educational qualifications and of occupational class, ranging from 0 to 3 (table 3).

From the skills levels needed for particular jobs and the required educational qualifications shown in table 3, an index of the distance between the two has been devised. We obtain a skill-level distance score (SD_i) for each individual i by subtracting her/his qualification score (LQ_i) from the occupational skills level (LO_i):

$$SD_i = LO_i - LQ_i \ . \tag{1}$$

SD ranges from +3 to −3. A score of 0 indicates a match: the individual's educational qualifications match those required by the occupational category that he/she has attained—eg a person with a degree who is in a professional post, or one with only minimal qualifications who is in an elementary occupation. A positive score indicates underqualification, with somebody lacking the skills level required for the obtained occupation (such as a professional with only level-2 educational qualifications); a negative score indicates overqualification. Thus we have created a seven-point scale of skill-level distance (from +3 to −3). This scale provides a reasonable approximate

Table 3. The classification of occupational skill and educational qualification levels used in this paper.

Occupational group[a]	Educational qualifications	Level	
		LO[b]	LQ[c]
Legislators, senior officials, and managers Professionals	levels 4/5 (eg first/higher degree)	4	4
Technicians and associate professionals	level 3 (eg 2+ 'A' level passes, NVQ level 3)	3	3
Clerks Service, shop, and sales workers Skilled agricultural/fisheries workers Crafts and related trades Plant and machine operators/ assemblers	level 2 (eg 5+ 'O'/GCSE level passes, NVQ level 2, School Certificate)	2	2
Elementary occupations	level 1 (eg 1+'O' level passes, GCSE any grade, NVQ level 1)	1	1

[a] The ISCO occupational groups refer to the skill levels required as defined by educational qualifications according to the International Standard Classification of Education (ISCED) (see Hoffmann and Scott, 1993; UNESCO, 1997).
[b] LO—occupational level
[c]LQ—qualifications level.

measure of occupational attainment in relation to education/qualification, and can be used to evaluate the extent to which different groups are underqualified or overqualified according to their positions in the labour market.

As the data are hierarchically structured, consisting of variables at the individual and at the neighbourhood level, we conduct a multilevel analysis using MLWin software.(7) In 'standard' methods of multivariate regression analysis, all variables are treated at the same level and therefore variables measured at different levels (individual and neighbourhood levels in our case here) had either to be disaggregated and forced into the same level or, alternatively, individual-level factors had to be aggregated into the neighbourhood level. Aggregating or disaggregating the variables would result in information being lost and potentially incorrect conclusions (Hox, 2002). Analysing hierarchical data using multilevel analysis helps avoid such problems and exploring the impact of second-level variables without forcing the two levels into a single level.

Interethnic differences in the occupational attainment by education

Our analysis uses the 2001 Controlled Access Microdata Sample (CAMS) for England and Wales. It comprises a 3% representative sample of the entire population and provides a range of data which allow individual-level analyses (CCSR, 2005; http://www.statistics.gov.uk). As our focus is on measuring the distance between skill levels and occupations, only adults of working age who are not in full-time education are included. Cross-classifying ethnicity and religion, fifteen separate ethno-religious groups are identified (table 4). In our sample, those claiming Indian ethnicity are composed of 46% Hindus, 29% Sikhs, and 12% Muslims; the Muslims incorporate 42% Pakistanis, 16% Bangladeshis, 9% Indians, and 6% Black Africans.

(7) For details of specialist software for multilevel analysis, see Bryk and Raudenbush (1992) and Rasbash et al (2003).

Table 4. A fifteen-fold cross-classification of ethnicity and religion derived from the Controlled Access Microdata Sample of respondents to the 2001 Census of England and Wales.

Ethno-religious group	*N*	%
Christian		
Christian White British	634 799	63.3
Christian Irish	10 597	1.1
Christian Black Caribbean	8 539	0.9
Christian Black African	7 096	0.7
Muslim		
Muslim Pakistani	12 398	1.2
Muslim Bangladeshi	4 662	0.5
Muslim Indian	2 581	0.3
Muslim Other	1 951	0.2
Indian		
Hindu Indian	10 062	1.0
Sikh Indian	6 311	0.6
Jewish White British	3 932	0.4
Chinese	5 333	0.5
No religion White British	143 365	14.3
Other White British	74 810	7.5
Other	76 769	7.5

We report here on the results of analyses on males only, based on a subsample of CAMS comprised of 100 415 individuals aged 16 – 64 years and not involved in full-time education at the time of the census.[8] The models reveal the probability of an individual being either over-qualified [ie a negative SD score in formula (1)] or underqualified [ie a positive SD score in formula (1)]. We ran multilevel multinomial logistic analyses which incorporated three other independent variables relating both to the individual and to the neighbourhood in which they lived.[9] For the latter, we used two variables relating to the area in which each respondent lived at the time of the 2001 Census: the index of multiple deprivation, IMD (ODPM, 2006) for each neighbourhood; and a modified index of isolation, MII (Johnston et al, 2004), indicating the degree of residential separation of ethnic groups. We used random-intercept models, which are superior to single-level regressions because they control for variation associated with clustered observations—which is the case with our two neighbourhood variables; they allow the overall probability of falling in the target category to vary across neighbourhoods. Logistic rather than multinomial models were deployed because of substantial software problems, associated with the large number of categories, in running the latter.

Religious differences within the Indian ethnic community

The analysis of Indian males (table 5) shows only one statistically significant difference between religious groups: Sikhs were nearly 50% more likely to be overqualified (an exponent of 1.46) compared with Hindus. (Buddhists too were much more likely

[8] We have restricted our analyses to males because gender differences are complex in this context given cultural variations in attitudes to (married) women working outside the home; with the current dataset, this made for small numbers in some of the cells if women were analysed, with an impact on the robustness of the findings. Analyses of males alone were thus sufficient to illustrate out general argument, leaving the analysis of gender differences as a subject for further research.

[9] The three independent variables used at the individual level—age, whether born in the UK, and whether married—were selected after exploration of a number of relationships and in line with other research findings (eg Heath and Yu, 2005).

Table 5. Results of the multilevel logistic regression for variations in the occupational returns on education among Indian males, contrasting those being overqualified with those who were either underqualified or whose qualifications matched the skill levels required for their chosen occupation (coefficients significantly different from zero at the 0.05 level or better are shown in bold).

Variable	b[a]	SE[b]	OR[c]
Constant	**−4.110**	**0.329**	**0.02**
Individual level			
Overseas-born (comparator: born in the UK)	−0.241	0.175	0.79
Unmarried (comparator: married)	**0.563**	**0.156**	**1.76**
Age	**0.018**	**0.007**	**1.02**
Religion (comparator: Hindu)			
Muslim	0.158	0.223	1.17
Buddhist	1.373	1.049	3.95
Sikh	**0.380**	**0.163**	**1.46**
Christian	0.041	0.316	1.04
Other religion	−0.608	0.523	0.54
No religion	0.290	0.350	1.34
Religion not stated	0.393	0.297	1.48
Neighbourhood level			
IMD[d]	**0.011**	**0.005**	**1.01**
MII[e]	**1.206**	**0.327**	**3.34**

[a] b—unstandardised regression coefficient.
[b] SE—standard error of the regression coefficient.
[c] OR—odds ratio associated with the regression coefficient.
[d] IMD—Index of Multiple Deprivation.
[e] MII—modified index of isolation.

to be overqualified than Christians—an exponent of 3.95—but that coefficient is not statistically significant.) Sikhs are a substantial minority within the Indian community, and are clearly less able to capitalise on their educational qualifications than are members of the larger Hindu group [a conclusion also reached by Brown (2000)].

Apart from the Sikh–Hindu difference (and, by implication, a difference between Sikhs and all other religious groups claiming Indian ethnicity), table 5 also shows that unmarried males are more likely to be overqualified than are married males. In addition, where they lived was also a significant influence on Indians' performance in the labour market relative to their educational qualifications. The more deprived and the more segregated the neighbourhood, the greater the likelihood that Indian males were over-qualified for their jobs. Labour-market disadvantage was greatest for those living in the most disadvantaged neighbourhoods.

Ethnic differences within the Muslim community

The Muslim population embraces a number of ethnic groups, of which Pakistanis form the largest component. Among those ethnic segments faithful to Islam, there are significant differences in occupational attainment levels relative to educational qualifications: in particular, as with the Indians, those living in the more deprived areas are more likely to be disadvantaged in the labour market relative to their educational qualifications (table 6)—as also were unmarried compared with married men.

There are also significant differences according to ethnicity within the Muslim population. Compared with Pakistanis, Indian Muslim males are significantly less likely to be overqualified in their occupations whereas Bangladeshi and Other Muslims are observed to have similar chances; Black Africans and those of 'Other' ethnicity were also more likely to be overqualified. There is thus a continuum of labour-market

Table 6. Results of the multilevel logistic regression for variations in the occupational returns on education among Muslim males, contrasting those being overqualified with those who were either underqualified or whose qualifications matched the skill levels required for their chosen occupation (coefficients significantly different from zero at the 0.05 level or better are shown in bold).

Variable	b[a]	SE[b]	OR[c]
Constant	**−2.686**	**0.228**	**0.07**
Individual level			
Overseas-born (comparator: born in the UK)	0.130	0.125	1.14
Unmarried (comparator: married)	**0.566**	**0.106**	**1.76**
Age	−0.001	0.005	1.00
Ethnicity (comparator: Pakistani)			
Indian	**−0.423**	**0.193**	**0.66**
Bangladeshi	−0.200	0.166	0.82
Black African	**0.463**	**0.176**	**1.59**
Mixed	0.178	0.166	1.19
Other	**0.390**	**0.126**	**1.48**
Neighbourhood level			
IMD[d]	**0.009**	**0.003**	**1.01**
MII[e]	**0.596**	**0.218**	**1.81**

[a] b—unstandardised regression coefficient.
[b] SE—standard error of the regression coefficient.
[c] OR—odds ratio associated with the regression coefficient.
[d] IMD—Index of Multiple Deprivation.
[e] MII—modified index of isolation.

experience within the Muslim male population: Indian Muslims perform much better than Pakistanis and Bangladeshis, whereas Black Africans perform worse. Treating Muslims as a homogeneous group when discussing occupational attainment in relation to education therefore ignores significant within-group differences, which reflect not only their ethnicity but also the characteristics of their home neighbourhoods.

Differences among ethno-religious groups

In this final analysis, we look at the differences across all of the major ethno-religious groups in England and Wales (table 1), comparing the skill-level distances (ie overqualified, underqualified, match) with those of the majority population component—Christian White British. Two models are fitted: model 1 looks at differences between groups in levels of overqualification (those with scores of −3 versus all others); model 2 looks at underqualification (scores of +3).

All but two of the ethno-religious groups are significantly more likely to be disadvantaged in the labour market relative to their qualifications according to model 1 (table 7): the exceptions are Christian Irish and Jewish White British, whose probabilities of being overqualified are not significantly different from those of the Christian White British. All of the significant exponents are substantial, with nine of the twelve greater than 2.0 and the smallest 1.60. Among the four Muslim groups, the exponents indicate that they are 2.28–4.51 times more likely to be overqualified than the majority male population, and the two other Indian groups—Hindus and Sikhs—are also twice as likely to be overqualified. The biggest difference, indicating the greatest degree of labour-market disadvantage, concerns Christian Africans.

Model 2 focuses on underqualification, and has many fewer significant coefficients. Compared with Christian White British males, only Bangladeshi Muslims and Christian Africans among the minority ethnic groups are less likely to be underqualified—as are White British with no religion, those with other religions, and those classified as 'Other'.

Table 7. Results of the multilevel logistic regression for variations in the occupational returns on education among males in different ethnic-religious groups, contrasting those being overqualified with those who were either underqualified or whose qualifications matched the skill levels required for their chosen occupation (coefficients significantly different from zero at the 0.05 level or better are shown in bold).

Variable	Overqualified			Underqualified		
	b[a]	SE[b]	OR[c]	*b*	SE	OR
Constant	**−5.001**	**0.118**	**0.01**	**−3.464**	**0.059**	**0.03**
Individual level						
Overseas-born (comparator: born in the UK)	**0.291**	**0.094**	**1.34**	**0.317**	**0.073**	**1.37**
Unmarried (comparator: married)	**0.770**	**0.058**	**2.16**	**0.305**	**0.208**	**1.36**
Age	0.000	0.002	1.00	**0.031**	**0.001**	**1.03**
Ethno-religious group (comparator: Christian White British)						
Christian Irish	0.203	0.256	1.23	0.073	0.110	1.08
Christian Caribbean	**0.644**	**0.233**	**1.90**	−0.037	0.177	0.96
Christian African	**1.976**	**0.170**	**7.21**	**−2.027**	**0.512**	**0.13**
Muslim Pakistani	**1.016**	**0.186**	**2.76**	−0.118	0.160	0.89
Muslim Bangladeshi	**0.825**	**0.300**	**2.28**	**−0.735**	**0.197**	**0.29**
Muslim Indian	**1.050**	**0.338**	**2.86**	0.211	0.264	1.23
Muslim Other	**1.507**	**0.180**	**4.51**	−0.115	0.191	0.89
Hindu Indian	**0.998**	**0.178**	**2.71**	0.232	0.131	1.26
Sikh Indian	**0.700**	**0.265**	**2.01**	0.101	0.175	1.11
Jewish White British	0.520	0.312	1.68	0.281	0.150	1.32
Chinese	**1.057**	**0.271**	**2.88**	0.199	0.215	1.13
No religion White British	**0.471**	**0.068**	**1.60**	**−0.240**	**0.037**	**0.79**
Other White British	**0.615**	**0.083**	**1.85**	**−0.179**	**0.048**	**0.84**
Other	**0.954**	**0.108**	**2.60**	**−0.146**	**0.084**	**0.86**
Neighbourhood level						
IMD[d]	0.002	0.002	1.00	**−0.007**	**0.001**	**0.99**
MII[e]	**0.604**	**0.155**	**1.83**	**−0.360**	**0.112**	**0.70**

[a] *b*—unstandardised regression coefficient.
[b] SE—standard error of the regression coefficient.
[c] OR—odds ratio associated with the regression coefficient.
[d] IMD—Index of Multiple Deprivation.
[e] MII—modified index of isolation.

Three of the four coefficients for the two neighbourhood variables are statistically significant. Residents of the areas with the greatest levels of ethnic residential segregation are more likely to be overqualified for their current jobs, and less likely to be underqualified; those living in the more deprived neighbourhoods are also significantly less likely to be underqualified.(10) Labour-market disadvantage is not just a feature of ethno-religious standing, therefore, but also of place of residence. Most non-Christian White British males in England and Wales are relatively disadvantaged—in particular, they are more likely to be in jobs for which they are overqualified; those who live in the more deprived and residentially segregated areas are doubly disadvantaged.

(10) It is not clear why the relationship with IMD for overqualified males is both insubstantial and statistically insignificant, especially given the significant relationships reported in tables 5 and 6. That both neighbourhood variables were statistically significant in the analyses reported there, as well as for underqualified males in table 7, suggests that this is probably not a multicollinearity issue.

Conclusions

This paper has contributed to, and extended, work on the 'ethnic penalty' experienced by various minority groups in the British labour market. Using a new method of measuring that penalty—the difference between the level of skills required for a particular occupation and the individual's educational qualifications—we have analysed the extent of disadvantage experienced by a sample of males drawn from the 2001 Census data. We have extended earlier work by focusing not on self-reported ethnicity alone (within the constraints of the census categories) but also on religious affiliation, on the grounds that both variables are crucial indicators of membership of various ethnic communities. In this way, it has been possible to analyse differences not only across a wide range of ethno-religious groups but also both among those claiming Indian ethnicity according to their religion (the main groups being Hindus, Sikhs, and Muslims) and among Muslims according to their ethnicity (the main groups being Pakistanis, Bangladeshis, Indians, and Black Africans).

The results of these analyses have clearly indicated the value of exploring ethno-religious differences in the occupational returns on education, rather than just ethnic differences alone. Members of virtually all ethno-religious groups suffer what appear to be 'ethnic penalties' in the labour market relative to Christian White British males, in that they are more likely to be overqualified for their current jobs. But there are also significant differences across the nonwhite communities: within the Indian ethnic community, for example, there is a significant difference between Hindus and Sikhs (Sikhs are more likely to be disadvantaged) and among Muslims between Indians, Pakistanis, and Bangladeshis.

Where members of minority communities live accentuates their labour-market disadvantage. Those whose homes are in relatively deprived and/or ethnically segregated areas are more likely to be overqualified, for example, and less likely to be underqualified, corroborating Heath and Yu's (2005) suggestion that 'social isolation' may be related to labour-market performance among ethnic minorities.

Much concern has been expressed in recent years about the educational performance of particular ethnic groups within British society—although there is clear evidence that the performance gaps are closing (Wilson et al, 2005) and do not apply equally to all groups in all places (Johnston et al, 2007). Whatever the situation with regard to educational performance, however, the research presented here indicates the need for concern regarding how the qualifications achieved by members of various ethno-religious groups are used in the labour market. There is clear evidence that most ethnic minority groups are disadvantaged in realising the employment potential indicated by their educational achievements.

Finally, the research presented here has sustained arguments regarding the diversity of Britain's multicultural society and the difficulties of capturing this through data on ethnicity derived from censuses and comparable collections. These—of necessity—define categories which then become the accepted basis of discourse: they define boundaries within which much analysis and policy making is constrained. As Aspinall (2000a, page 110) notes, some "defensible measurement of the ethnic composition of the population" is needed in order to monitor a wide range of aspects of contemporary society (see also Ellis, 2009). We have shown that the self-assessed ethnicity question, deployed for the first time in the 1991 UK Census and extended in 2001, is necessary but not sufficient for analyses of education and the labour market. Data collections such as censuses are important influences on collective identities; they must be constructed and, especially, deployed so as to come as close to the reality of those collective identities as is feasible, rather than oversimplifying a complex situation and perhaps stimulating policy initiatives which fail to reflect real needs. "What is measured by the

census is a particular kind of politicised social construction of reality" (Kertzer and Arel, 2002, page 35; see also Aspinall, 2007) and can, in its turn, distort reality if not properly used.

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